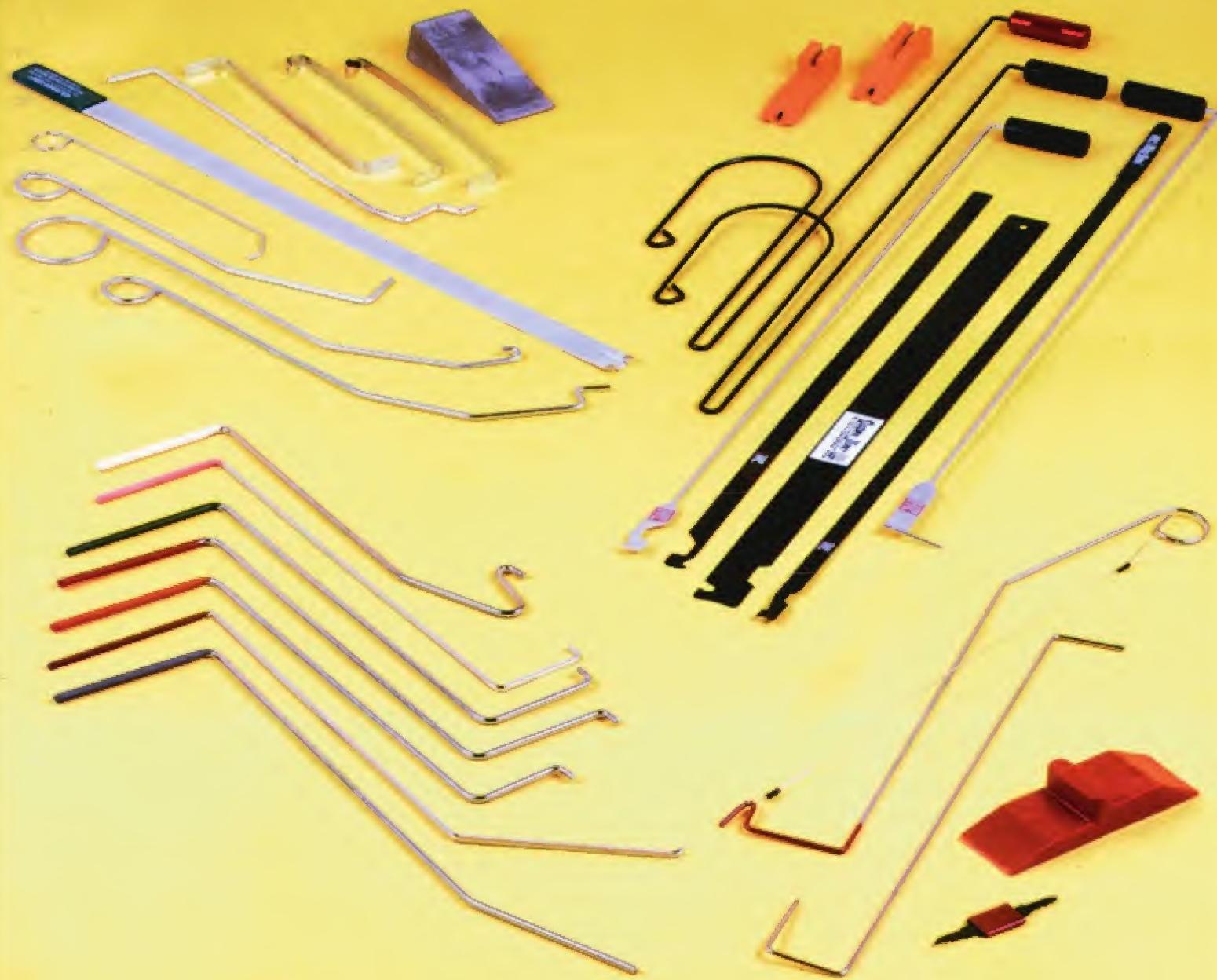


November 1988

# The National Locksmith®



Tools of the Trade

# Contents

## Features

### **28** The 1989 Mercury Scorpio

Shirl Schamp attacks this new car which features a radical lock and key system. Here's how to deal with all the problems you might find.

### **36** Tool Review

Here is a section of product releases on many of the tools now available to the locksmith. Take a look and see if you can find anything you might need.

### **46** Opening A Diebold Vault Door

In this article Dale Libby deals with the dastardly Hypnotic dial by Diebold on a vault door which needed opening. Did it make Dale cluck like a chicken or bark like a dog? Read and find out.

### **50** The MGB Ignition Caper

His name is Roberts, Jack Roberts. He was as cool as a locksmith could be until a hot summer day when a lady and her MGB shook him up.

### **54** A Locksmith's Tale

In his own humorous way, Joe Locke tells of his latest misadventure. For a locksmith to be named "Locke," he'd have to have a good sense of humor!

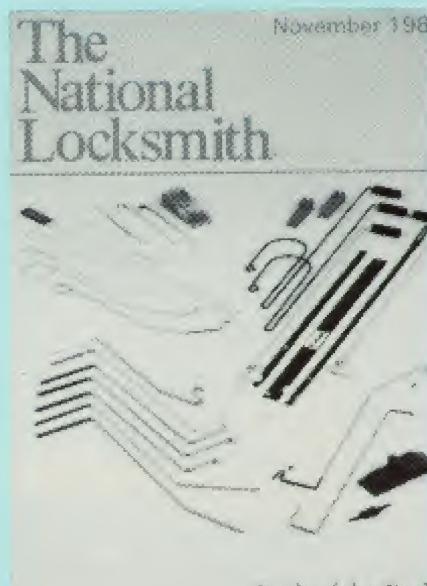
### **56** Illinois Double Sided Locks

Here are Bob Sieveking's procedures for servicing Illinois double sided locks and for cutting keys. Practice makes perfect.

### **73** Servicing The Sargent 8-Line

This month Don O'Shall takes a look at a lock with a lot of versatility. You can spend a lot of time on a simple procedure if you're unfamiliar with the lock. Don did!

**Click on the article you wish to read**



Tools of the Trade

#### On The Cover

The car opening tools on this month's cover are manufactured by the following companies: (clockwise from bottom right) Pro-Lok, High Tech Tools, American Locksmith Service, HPC, Inc. (Photo by Bakstad Photographics.)

## Departments

**5** Commentary   **6** Letters   **9** Technitips   **18** Newsmakers   **75** Shop Talk

**Editor/Publisher** Marc Goldberg  
**Managing Editor** Sandy Kucharski  
**Editorial Assistant** Debbie Schertzing  
**Circulation Manager** Barbara Coulam  
**Production Consultant** Marian Raney  
**Technical Editor** Robert Sieveking  
**Co-Technical Editor** Steve Spiwak  
**Technical Writers** E. Lee Griggs, Ed Hill, Dale Libby, Joseph Locke, Regis McCafferty, Dave Mc Omie, Rick Ohmit, Don O'Shall, Jack Roberts, Shirl Schamp  
**Advertising Sales** Thomas Mlodoch  
**Technical Advisors** Richard Bushe, Robert Robinson, Sean DeForrest, Bert Michaels



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Printed in the

# Commentary

## A Law We Could Live With

As most of you already know, I am against almost every form of locksmith licensing and registration. I have argued that these regulations will not benefit our industry because the license fees will act like taxes and because we do not need more red tape in our lives. I have received many letters from California locksmiths protesting the regulations which that state has adopted. Among other regulations, a locksmith there must hold a contractor's license. There is a core group of locksmiths who worked hard to get that legislation passed, but many others are unhappy with the results.

Recently though, I have changed some of my thinking about locksmith legislation. I would like to see a simple background check done before someone can call himself a locksmith. Those with felony convictions should be barred from locksmithing if the conviction is less than ten years old.

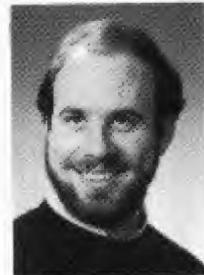
Why should this be done? The profession of being a locksmith means that you are entrusted with the security of your customers...their lives and their property. That is a sacred trust. Therefore, the customer should have the right to know that his security is being protected by an honest individual. In most states today, all it takes to become a locksmith is a business card. Almost anyone could go from burglar to locksmith by stopping in at their local quick printer.

How can we organize such a background check? This will have to be handled by each state passing similar legislation. In Illinois, for example, to be licensed to run a day care center out of your house, you must submit to a background check. The state runs your name and date of birth through the computer and if you have a police record it prints out a neat copy in black and white.

Why do we need to do background checks on locksmiths? Yes, it means we will have to suffer through some red tape, and we will have to pay a small fee for the license. But 99% of you reading this today will pass such a test with flying colors. However, I know for a fact that there are a few practicing locksmiths out there who have police rap sheets as long as my arm. Those are the guys who should not be sharing the profession of locksmith with you.

Sure it's possible for a person to make a mistake. Many people have committed a crime, paid their debt to society, and gone on to become productive citizens. However, the customer should be able to trust that his locksmith was not just released from prison last year. Such a law was passed in California and has begun to take effect this year.

I know that some of you will complain that this would just be one more headache to worry about. But think of it this way. Here's your chance to help protect your customers from present and/or former criminals who are calling themselves locksmiths. Let's not make this a witch hunt. Just because someone may have committed a crime in his past does not mean that he cannot reform. But we do need some guidelines put in place throughout the states. I'm proud to be involved in the locksmith industry. But I'll be even prouder when a police background check knocks out the few bad apples rotting at the bottom of our barrel. What do you think?



*Marc Goldberg*  
Editor/Publisher

November 5

# Letters

## Comments, Suggestions and Criticisms

**The National Locksmith** is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to: Editor, **The National Locksmith**, 698 Bonded Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

### Officer Defends Car Opening Responsibilities

As I am sure you are aware, it is difficult if not impossible to print an opinionated article without offending anyone and I am no exception. In the August issue, a reader felt compelled to rehash a letter to the Editor from the May issue of *The National Locksmith* regarding police interference.

I am a sergeant with the local sheriff's department and am a school trained locksmith with certificates in basic and advanced locksmithing.

According to the way the May article was written, the police officer could have been a little more diplomatic with the locksmith and should also have had enough sense to give way to a professional locksmith. The problem may well have been in how he was approached. If the locksmith approached the police officer and commented that he had no business opening cars and that he was a locksmith, the officer probably acted as cool as he could. If the locksmith had

offered his assistance, the officer may well have stepped aside without any hard feelings on either side. This appears to be one of those situations where neither you nor I were there and do not know what was said, how it was said and by whom, yet one side of the story was printed in a trade publication which is not distributed to the police for comment. In other publications, this may well constitute irresponsible journalism.

For the information of your readers including the individual who felt it necessary to comment on the article in the August issue, many police agencies train their officers in the proper use of car opening tools. This is not normally done because the officers want to do this type of work but because the public has demanded this service from their police whose job it is to "serve and protect" the public. Agreed this is not the case in all instances and there are officers out there who have purchased car opening tools and read the instructions and have then attempted opening cars when requested to do so without any formal training. This practice has been discontinued by many departments and if locksmiths are having problems with some police departments, you may do them a service by pointing out to someone in the department who has the authority to set policy as to the liability they may incur by damaging a control rod. Or, in

the furthest extreme that I have heard, a police officer attempted to open a new Lincoln for a citizen and according to the story I was told, somehow shorted out wires on the electric window controls which resulted in a fire that totaled the vehicle.

In closing, I for one agree that police officers should not attempt tasks that are beyond their ability in most situations but there are rare instances when a policeman should be able to get away with telling a citizen "it's not my job." Policemen pull victims from burning wrecks, a fireman's job; policemen perform CPR on adults and children, an EMT's job; policemen jump into fast moving waters to pull victims to safety, a lifeguard's job; policemen enter burning buildings to save lives, again a fireman's job; push wreckage from a roadway, a towtruck operator's job; change tires for elderly, disabled, unknowing or otherwise unable motorists, the auto club's job. You will find policemen involved in Explorer Scouts, Boy Scouts, Girl Scouts, Big Brother Programs and many other services which given the fact that most policemen work shift work, these men and women give a lot of their selves to the community good and I feel that generally, whether you're in a large metropolitan area or in the smallest of towns, your police force provides a service and we can all be thankful that

*Continued on page 82*



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# Enter the 1988 Technitips Contest

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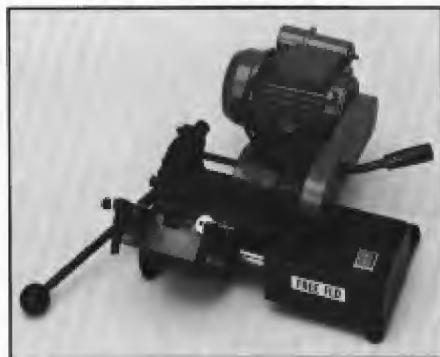
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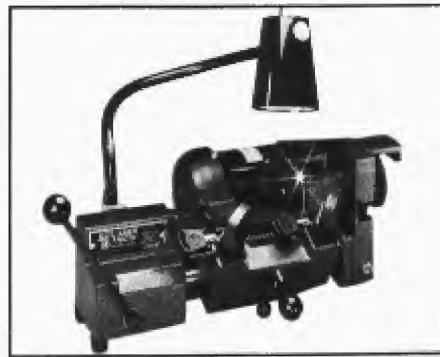
## The Free Flo



### Second Prize

Designed to cut Medeco® and Emhart® keys. Duplicates a Medeco® key very quickly and accurately. Will also cut regular cylinder keys. By Fulton Lock.

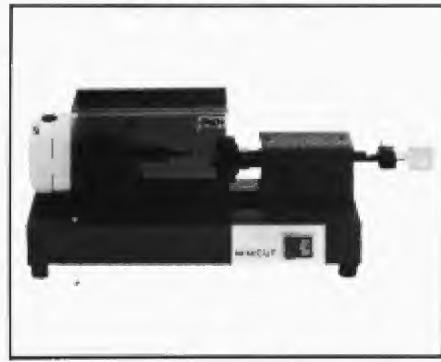
## Saber Tooth



### Third Prize

A fast semi-automatic duplicator featuring carbide cutter, full 1/3 hp motor, 2400 rpm. Working lamp and deburring brush are standard. From The Locksmith Store.

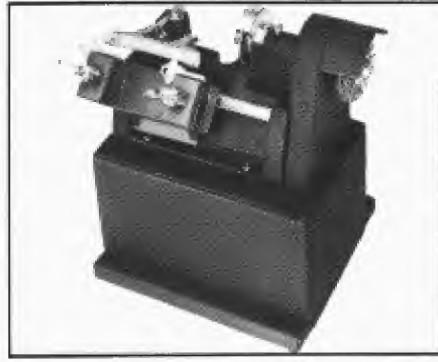
## Ilco KD94



### Fourth Prize

Cuts the 1137 tubular key, brass or steel accurately and quickly. Features include large chuck to hold standard size key heads, easily adjustable.

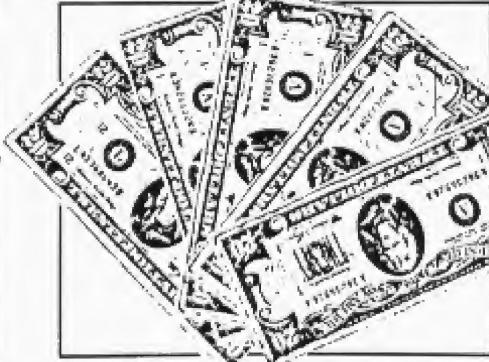
## 9150 Speedex



### Fifth Prize

The Speedex has been transformed from the old stand-by to the machine for today's needs. Features double sided jaws. From HPC.

## \$100.00 Cash



### Sixth Prize

Everyone can use a few extra dollars! This prize will brighten your day...and fatten your wallet.

## Contest Rules

All you need to do to enter is submit a tip, covering any aspect of locksmithing to *The National Locksmith*. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Why not write it down and submit it to: Steve Spiwak, Technitips' Editor, *The National Locksmith*, 698 Bonded Parkway, Streamwood, IL 60107.

Tips submitted to other industry publications will not be eligible! So get busy and send in your tips today! You may win cash, merchandise, or even one of several key machines! At the end of the year, we choose the winners of the above prizes.

Last year dozens of people walked off with money and prizes. Wouldn't you like to be one of the prize winners for 1987? Enter today! It's a lot easier than you think!

## Every Tip Wins 'Locksmith Bucks!'

Yes, every tip published wins a prize. But remember, you must submit your tip to *The National Locksmith* exclusively. Each and every tip published in Technitips wins you \$20.00 in Locksmith Bucks! Use this spendable cash toward the purchase of any books or merchandise from *The National Locksmith*. You also receive a Bonded Locksmith bumper sticker, decal and patch. Plus you are now eligible for the really big prizes!

## Best Tip of the month prizes!

If your tip is chosen as the best tip of the month, you will win \$50.00 in cash as well as \$30.00 in Locksmith Bucks! Plus you will receive a quartz Locksmith watch, a Bonded Locksmith bumper sticker, decal, patch and a Locksmith Cap. Plus, you may win one of the great prizes pictured above.

# Technitips

Helpful Hints from Fellow Locksmiths



Send me your Technitips.  
Who knows, you may be  
our next winner! c/o The  
National Locksmith, 698  
Bonded Parkway,  
Streamwood, IL 60107.

by Robert Sieveking

This month's Technitips are more examples of what you can do if you only try. Some locksmiths stand at a locked door and say it can't be opened while others standing at the same door will say it just hasn't been done yet but give me a little time and I'll figure it out. This month's second place winner came up with a solution to a telescoping steering column problem that I felt

was really original. Overcoming the daily problems is the name of the game in the locksmith trade. As Charles Peguay put it, "It is the essence of genius to make use of the simplest ideas."

I was asked the other day, "What can I do to make my business grow? Is there some trick or advertising that I should be going to increase my repeat customers?" After thinking about this for a while, I was reminded of the old jeweler that had a shop near mine, not so many years ago. To look at his little business, you'd think it didn't amount to very much, but there were very few people that didn't know him or hadn't done business with him. For some reason, he was liked and respected by

almost everyone he met. His prices were not extraordinarily low, and his shop was far from modern, yet people shopped at his store because they believed him to be a fair and honest businessman. I can't recall ever seeing a big advertisement that he ran in the paper or even in the telephone directory. His biggest advertising was his customers. Someone would bring in a chain or a watch band to be repaired, and he would mend it, charging only a dollar or two. Or if he knew you, he would repair the piece while you waited and then not accept payment, saying "It's OK, it only took a few minutes," or "How can I charge you for that?" This was his form of advertising. My wife is still wearing a diamond ring that



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was bought in his shop.

*His little shop is a parking lot now, but the principle he applied, that sustained his business, is as strong today as it was when he was still there. "You must give, if you expect to receive." You have to be profitable, but don't try to make a killing on every job you do. Give a few keys away now and then. It's good for business. Chalk it up to your advertising budget. It'll come back.*

*When I open a car for someone, I get keys out of the car and make a second set. The second set is stamped with the shop name and phone number. What a great way of giving out your card. The customer might lose a business card, but he won't misplace those keys. As you make out the invoice for twenty-five or thirty dollars for opening his car, remark that the keys are NO CHARGE. Write it on the ticket. "Spare keys — no charge." Give the customer his keys without a key ring.*

*explaining that he should put them in his wallet, behind his drivers licence. Create a little good will. Good will is like seed, it multiplies itself.*

*Next time he or one of his friends needs service, he'll think of you. And your phone number will be in his wallet, on that free set of keys.*

*Congratulations to all those whose Technitips were printed this month.*

### November's Best Tip

I've found a great way to open the Chevrolet Astro van. The hardest of all they say. This Technitip is a very easy method of opening the Astro van, through the back door.

If you look carefully behind the rear door handle, you will find a small hole which the handle pull passes through. By inserting a standard short wing glass tool

through this hole, following the shape of the tool as you pass the tool into the door, and going in an upward direction after the tool is inside of the door, you will come into contact with the locking lever. (See illustration 1.) The lever has a

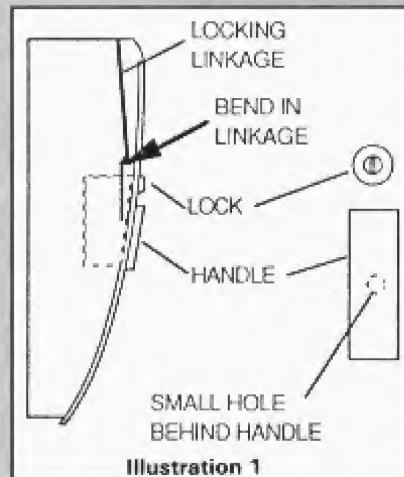


Illustration 1

90° and a 45° bend in the linkage, about 4" above the lock. Using the end of the wing glass tool, push up the linkage and the door will be unlocked.

I strongly suggest that the locksmith use the first opportunity to remove the plate on the edge of the rear door of the Astro van. Insert the tool as I have described and visually see how this tip works. If you know exactly what you want to move inside the door, and can visualize the action of the tool; it makes the job a lot easier. Good Luck.

Russell Elswick  
Kentucky

\*\*\*\*\*



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This technitip concerns a problem that I have had since I started working on telescoping steering columns. It is an easy solution to locking the telescoping portion of the steering shaft, so that the lock plate compressor can be used to remove the retaining clip. I purchased a special telescoping steering wheel lock plate compression tool, but it would not work on the newer columns because the '86 and up columns (using the sector gear ignition locks) have a different thread on the telescoping locking screw. It looks to be a  $\frac{1}{4}$ "-10 thread, which is not a common size.

My solution is very simple, a piece of rod that will fit down inside the telescope shaft, 1 $\frac{1}{4}$ " long (see illustration 2). Simply drop the rod into the end of

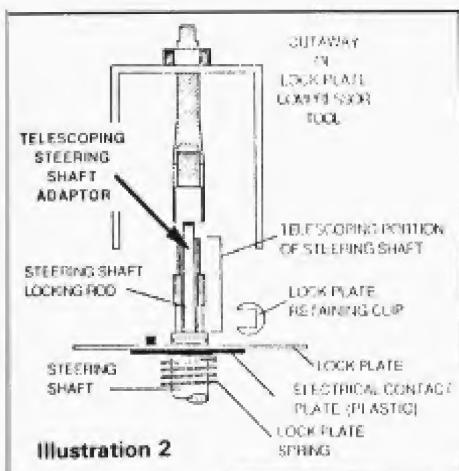


Illustration 2

the shaft and use the regular lock plate compressor tool. As the tool is threaded over the shaft end, it will contact with the adaptor rod and push the steering shaft locking rod down to lock the telescoping shaft. Tighten the lock plate compressor nut to push the lock plate down, allowing the retainer clip to be removed or replaced. The adaptor is simply a  $1\frac{1}{4}$ " piece of  $3/16$ " rod. The adaptor will also work on the older models and is very easy to make. This adaptor makes it unnecessary to own a special adaptor for telescoping steering columns.

Ronnie Moore  
Illinois

\*\*\*\*\*

Here is a handy tip that just might get some unprepared locksmith out of a bind, when he is asked to service one of the older Yale removable core locks, and he suddenly realizes that there are

no seven pin blanks on the trunk to make a core key.

Pat Durbin  
Alaska

The Yale removable core locks require a seven pin key for the core removal function. By filing the shoulders of a six pin blank back approximately  $3/16$ ", and dressing the side milling of the key to fully enter the keyway, a workable seven pin blank can be made which will operate the plug retainer and allow the cylinder to be removed for service. Cut the first six cuts of the key onto the long blank, leaving the tip high. If the system is master keyed, duplicate the master key

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This TechTip has to do with a 3000 Simplex key bypass lock, using the Adams Rite mortise deadlock with the paddle actuator on the inside. My tip is an easy method of locking the latch back without the use of a key.

The customary method of locking the latch back to prevent the door from locking, would be to hold the latch in and rotate the key around to push the latch lock mechanism down. This prevents the latch from springing out and locking the door.

My method is to install a 6-32 Allen head screw which locks the paddle in the down or latch retracted position. Looking from the top, on the case of the paddle unit, measure 8 cm. in and 2 cm. down. Drill and tap a hole at this point to accept the 6/32 set screw. When the door is to be dogged open, simply push the paddle down and tighten the set screw.

This method makes it unnecessary to give out a key to employees that open the store in the morning. The employees only need the combination to the Simplex lock. Once inside, they can dog the door open to allow custo-

on the long blank, to make a core or control key for all the locks in the system. (See illustration 3.)

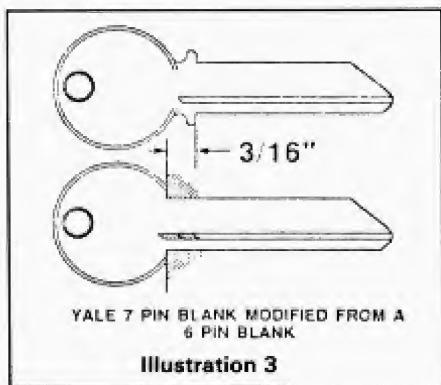


Illustration 3

Larry Thompson  
Arkansas

\*\*\*\*\*

This Technitip is an easy method of opening the Master combination padlocks. I've found that a piece of pop can, shaped about the size of your thumb nail will open most of these locks. Slide the pointed end of the shim down around the toe side of the shackle, and by turning the point around toward the body of the lock, the spring latch will be pushed back,

allowing the lock to be opened. Sometimes a little help from a pair of pliers is needed. The thin metal can be shaped with a pair of scissors.

Once open, it is easy to align the gates through the open shackle hole, using a pen light or otoscope. Record the number for the positions of the gates. Subtract fourteen from each number to find the working combination for most padlocks. For the key bypass type locks, subtract eleven from each number to find the working combination. If your working combination does not open the padlock, add or subtract one or two from each number and try again. If you have aligned the gates accurately, this tip works every time.

Ron Heidzig  
South Dakota

\*\*\*\*\*

This little tip is for those among us that require a little help in reading the impression marks on keys and codes on locks that are too small to be clearly read with the naked eye. I've found that a simple magnifier is a very helpful addition to my tool kit. A pocket magnifier of X2 and X4 magnification can

make a big difference when the marks are not clear or the code numbers on a lock are not stamped well. Being able to tell the difference between a 3 and an 8 can sometimes be a problem that spells success or failure when making a key by code. Seeing the difference between a rub mark and an impression mark gets to the best of us sometimes.

My solution is a pocket magnifier, which is widely available. They are sold in machinist supply houses and drug stores. If your funds are a little low, you can easily use a lens from a movie or slide projector.

I hope this little tip helps a brother locksmith who may be having trouble impressioning. The magnifier has been a welcome addition to my tools, and I would not like to try to impression without it.

Bill Frase  
Delaware

\*\*\*\*\*

This short tip is for those that install floor safes. When you have broken through the concrete and are digging the hole to accommodate the new safe, take it out of the box and use the box to

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test the hole for size and depth. When the carton will fit into the hole with a little room to spare, you'll know that the hole is large enough. This takes most of the work out of test fitting the safe to the hole, as the box is usually a lot lighter to handle.

P.J. McConnel  
California

\*\*\*\*\*

This tip covers, how to work on ignition cylinders of the 1986-1988 Hyundai Excel, and Mitsubishi Precis. I learned this the hard way, as we all do at times. The cylinder plug can be slid out of housing in a few minutes.

I use a key extractor with a point and a hook at the end. Insert it into the keyway between the (R&T) in the word start, bottom it out all the way in and with a rocking motion you will pry the holding disc toward you, do this while you apply pulling pressure on the cylinder plug. You will feel the cylinder plug slide out slightly, while keeping this outward pressure on the plug, rake the wafers and push down on the activator lever in the keyway. The plug will start to slide out. Continue until it slides all the way out.

Repair, replace or repin the cylinder plug. To replace, insert the key into the plug, and be sure the locking disc is facing toward front of car. Then pry the activator lever down out of keyway so the cylinder plug will slide into the housing.

Note: Activator lever stays in the slot of the keyway and has square ends which hook onto the cylinder plug, keeping it from coming out, or going back in. Also if plug is put in the wrong way, all will work however the plug will slide out when car is off, so if this is the case, just reverse the plug then reinsert it. The key will operate if cut on one side.

Frank Markisello  
New York

\*\*\*\*\*

The following is a method for making a universal plug follower and master pin removal tool.

Obtain an empty 20 GA plastic shotgun shell (hull) and cut it around just above the brass base.

Split the hull lengthwise twice taking out a piece about .25 ( $\frac{1}{4}$ ) inches this allows the hull to be rolled up to make an automatic expanding plug follower

it is possible to make the follower a master pin removal tool also, by the following method. (See illustration 4.)

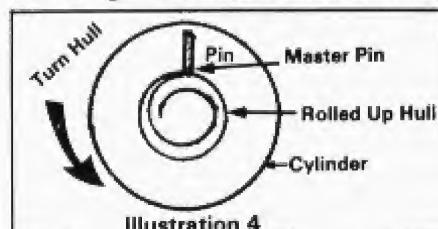


Illustration 4

Roll the hull, push out the plug, and place split area under pins. Press down on each end of the hull to depress spot area allowing the master pins to drop on depressed part of the hull. Turn the follower in the direction that allows the top pins to be pushed back into the cylinder while the master pins are retained in the depressed area of the hull.

The master pins can be removed by holding the cylinder vertical and pressing on the hull, in the split area, to allow the pins to fall out.

P.S. I have found that the 20 GA federal plastic hull is best for this application because there are ridges on the outer surface of the hull and it will grip the master pins better.

Don Simpson  
Missouri



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# Newsmakers

New Products and Industry News

## Mayflower Sales Co. Introduces EL-DE 2000D

A stand-alone card access control system which can operate electric strikes, locks, etc., is available from Mayflower Sales Co.

The EL-DE-2000D is a low cost card reader that uses infra-red encoded cards. Infra-red cards provide a higher degree of security than magnetic cards and are not subject to loss of data by proximity to a magnetic source. Supplied with one master card, two programmer cards and three access cards, the 2000D can be used with up to 1000 user cards divided into four groups or shifts. The programmer card can permit or prevent access to an entire group of cards. User cards are inexpensive, readily available and do not have to be programmed to work with the reader.

The control is programmed to operate with a card by simply passing the new card through the reader in conjunction with a programmer card. Cancelling a user card is simple and takes only seconds.

The EL-DE 2000D runs on 12VAC and operates a dry contact which closes for four seconds upon insertion of a valid card and is rated up to 2 amps @24V. Rechargeable nicad batteries maintain memory in case of a power failure. The reader connects to the control box with an eight foot, six conductor cable. Provisions are made for remote activation of the relay and for suspending access temporarily with a switch. A second reader can be connected for providing entry/exit control.

## American Lock & Supply Catalog Now Available

Referred to as the "Encyclopedia of the Locksmith industry," AmLock's 1200-page catalog will be ready for shipping on November 1.

The 1988 edition will feature several innovations compared to past AmLock catalogs: every item stocked by the Anaheim wholesaler will be highlighted; each item shown will be accompanied by its AmLock item number and quick check number and the catalog will be conveniently bound in two volumes.

The cost of the two-volume set will be \$30. A \$10 merchandise credit certificate, which can be applied to an initial purchase order meeting minimum opening order requirements, will be issued along with a purchased catalog.



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## Indiana Cash Drawer's Broad Line Catalog

A broad line of manually-activated cash drawers is the subject of a new, 12-page, full color catalog just released by Indiana Cash Drawer Company.

The new catalog depicts more than twenty cash drawer models and eleven removable money trays. Color choices and options available with some models further expand the selection.



## Lockmasters Develops New Service Course

Hamilton Products Group and Lockmasters, Inc. have developed a new G.S.A. servicing course.

The five-day course will teach opening and repairing procedures for the thousands of G.S.A. approved containers currently in service. Containers meeting G.S.A. specifications are the only units approved for storage of sensitive US government information. This course will offer the technician the background and the knowledge necessary to service government contracts, expand business opportunities, and increase profits.

Course material will cover not only the Hamilton G.S.A. line, but other brands as well which conform to the rigid specifications prescribed by the General Services Administration.

### G.S.A. Class Schedule '89

01/15—01/20	..... San Diego, CA
02/26—03/03	.... Washington, D.C.
06/04—06/09	..... Cincinnati, OH
08/06—08/11	..... Cincinnati, OH
10/08—10/13	..... Cincinnati, OH
12/03—12/08	..... Cincinnati, OH

## Kwikset's "K" Key Gets New Look

The key with the outlined letter "K" stamped out of the bow has been a highly recognized symbol of Kwikset Corporation and its residential lockset products for more than 40 years.

Kwikset management decided a major styling upgrade was long overdue.

The result is a complete new look that features nickel-plated instead of dull brass alloy; a florentined (etched) background for the embossed Kwikset logotype and the famous "K" die-cut of the bow.

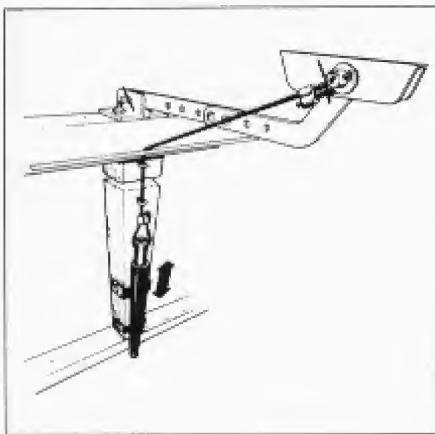


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## Gravity Drop Inc. Automatic Garage Deadbolt

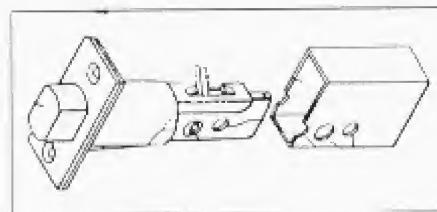
Gravity Drop Inc. manufactures automatic garage door deadbolts. The two models available are the Gravity Drop, for one-piece swing-up doors, and the Garage Guard, for sectional (roll-up) doors. Both products are simple in design, highly reliable, cost-effective, and straightforward to install. Both operate in conjunction with any brand of automatic opener, and neither lock has any electrical parts. This allows deadbolt security for the garage door with no loss of opener convenience.



Both the Gravity Drop and the Garage Guard use the same special "delay bracket" to attach the opener arm to the door. This bracket allows the bolt to operate without moving the door itself.

## C.H.A.M.P.S. Mfg.'s Protection Shield

"Champs" definition is "Commercial Hardware and Maximum Protection Shield." Virtually 90% of all deadbolts and key and knob locksets can be comprised. Even some high security deadbolts and keysets. "Champs" is a unique deterrence shield which is said to deter any attempted break-ins.



"Champs" is made of a very high grade metal which has been scientifically treated to maximize its protective strength against any intrusion by way of cutting, drilling, etc. "Champs" is specially designed to protect your locks and is built to destroy drill bits.

"Champs" will fit the following: Abloy, Arrow, Best, Corbin, Dexter, Falcon, Guardsman, Harloc, Ideal, Ilco, Kwikset, Lockwood, Lori, Lustre Line, Medeco, Parker, Ruswin, Sargent, Schlage, Security Hardware, U.S. Lock, Weiser, Weslock, Yale, etc.

"Champs" devices for key locksets come in  $\frac{3}{8}$ " and 1" for all residential commercial, industrial and government use. "Champs" Shield will fit  $2\frac{1}{8}$ " backset, as well as  $2\frac{3}{4}$ " backset locks and they are reversible for left and right hand doors. The "Champs" deadbolt lock shield is designed to fit all deadbolts, either  $2\frac{1}{8}$ " backset or  $2\frac{3}{4}$ " backset.



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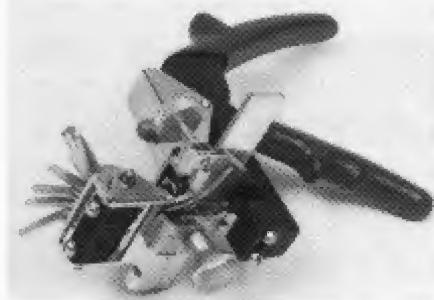
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## Curtis No. 15 Handles 8-Cut Keys

Curtis' No. 15 Code Cutter remains popular for cutting original vehicle keys by code. Recently, because a number of import car manufacturers have adopted a new 8-cut key for 1988 models and beyond, Curtis has introduced code programs using a 47° code cutter, which can cut the new keys. Recent programs have included makes and models such as Diahatsu, Honda Civic, Isuzu, Mitsubishi, Eagle Premier, Geo Tracker and Metro, and more.

The Curtis No. 15 Code Cutter's patented design allows it to cut original keys quickly, accurately, and dependably. By interchanging the Code Cutter's camsets and carriages, the No. 15



can be quickly adapted for a wide variety of domestic and import vehicles. Because it's portable, the No. 15 can be carried to any job.

## Orchard Lock Distributors Relocates to Hamden

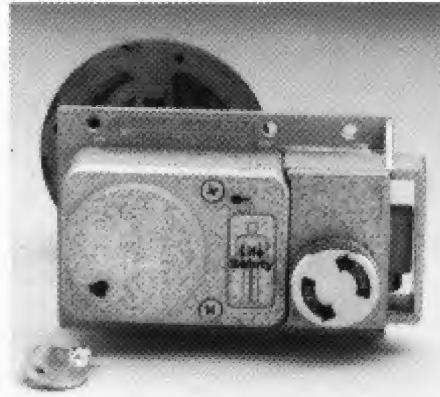
Orchard Lock Distributors, formerly of West Haven, CT, has relocated to 30 Edmond Street, Hamden CT. Orchard Lock is a full line distributor of security hardware to Locksmiths. Accelerated growth has generated a need for larger warehouse facilities.

According to Larry Dederico, Orchard's general manager, "In order to better serve our customers, we had to increase the stocking levels and depth of all of the product lines that we carry. The new warehouse affords us the opportunity to expand and accomplish our goals of better service and quicker delivery."

Toll free numbers, a full line catalog, competitive prices and a knowledgeable sales staff are a standard of Orchard Lock.

## S & G's 8470 Life Safety Deadbolts

Sargent & Greenleaf is now manufacturing the Life Safety Feature, an upgraded 8470 deadbolt package. Life safety kits are also available for retrofitting existing 8470's.



The new version is designed to comply with life safety codes (meets California code 3303.C, and NFPA safety codes) that require immediate exit from occupied buildings, in case of emergency, without the use of keys or other devices.

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# The 1989 Mercury Scorpio

"We started by doing a lockout. The door was extremely tight to wedge but was possible if done carefully. We could feel the rod but could not apply the needed torque."



Send your car opening questions to: Shirl Schamp, *The National Locksmith*, 698 Bonded Parkway, Streamwood, IL 60107.

by Shirl Schamp

Whenever a new locking system is introduced, we tend to run scared, or even have nightmares. Well, the 1989 Mercury Scorpio has one such locking system. When they upgraded the Scorpio to this new concept they went to a Chubb lock.

The Chubb lock key resembles a bit key, and then for some reason the Ford Motor Co. decided not to continue with Chubb and changed manufacturers, now using the Tibbe lock. The Tibbe key looks different but operates with the same basic concept. Both locks and keys are shown in photograph one. On the left is the Chubb lock, and on the right is a Tibbe lock. (Disregard the key at the far right it's the glove compartment key and fits only the glove compartment.) The outside dimensions of the Chubb locks and the Tibbe locks that have been designed for the Scorpio are the same, which means when replacing the set of



1. (Left to right) The Chubb key with lock above and the Tibbe key and lock. locks on the Scorpio you could replace the Chubb lock with a set of Tibbe locks or vice versa.

Knowing how fast procedures become outdated, and new methods



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appear I feel its only a short time until we will be able to disassemble and decode an existing door lock, and use that information to manufacture a new key. I feel the answer for now is to stock a replacement set of locks, and simply replace the set which we can do profitably and still for less than the dealer. Some special knowledge is required to do this, like how to remove a lock that needs to be turned on, without having a key or being able to pick, and which can't be drilled because of the damage to the lock. There has to be a way to handle this. Let's start from scratch by totally examining a Scorpio.

We started by doing a lockout. The door was extremely tight to wedge but was possible if done carefully. Since the inside lock button was mounted on the

panel, it was clear we had a horizontal lock. We inserted two wedges for greater working room and then inserted a standard horizontal lock rod tool. We could feel the rod and it seemed we had been able to grab the rod in the U-shaped bind on the end of the tool but were unable to apply the necessary torque to bind enough to move the rod. We then checked the car for other weaknesses and decided that whatever we were going to do, it would be via the space created by wedging the door.

Pulling the panel was standard except for one hidden screw, located behind the electric window buttons (*see photograph 2*). The buttons just snap out, so don't worry if they become unplugged. It's just a male/female

connection designed only to receive itself one way; you can't reconnect it wrong.

The locking rod that we had felt, was a short rod, approximately one foot long, leading from the latch unit to an electric plunger (*see photograph 3*). We



**2. Hidden screw which affects panel removal.**

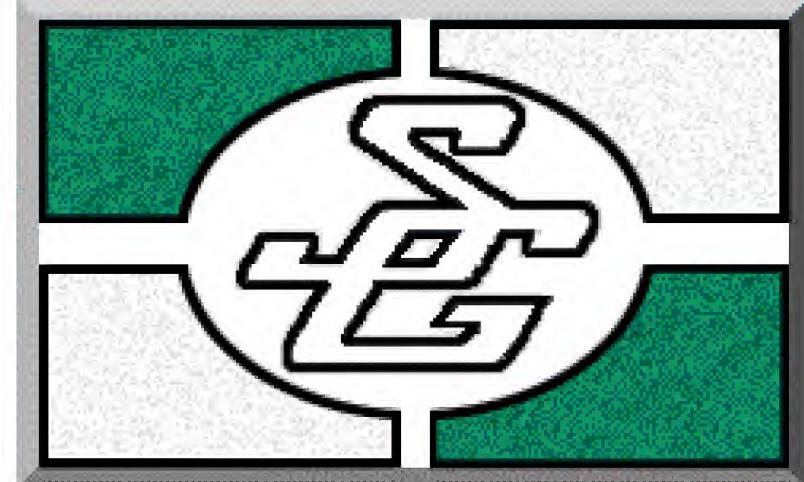


**3. Electric plunger attached to the lock rod.**

experimented for a while with various opening tools to see what was happening. For example, the tool could grab the rod but was unable to get the torque it needed. We could unlock the door if we contacted the latch with the tip of the tool but that was very difficult. We also tried the Super "J" which would reach the rod with no difficulty but would not actuate anything. Then, of course, we had some spring stock available to work with so we thought maybe we could come up with something different.

Since it was so easy to make a connection with the rod but we still needed something different to disengage the lock I began to think of other tools I have seen on the market, but do not have. The one that came to mind is the Zoro tool, from ABC lock Co. Since I didn't have one of these tools I decided that if I was to reverse the bend on the end of the horizontal lock tool to come down on the top of the rod, it would probably work. It did! I took a piece of round spring stock and used the dimensions of my existing tool, reversed the end and had a new tool. (*See photograph 4*.)

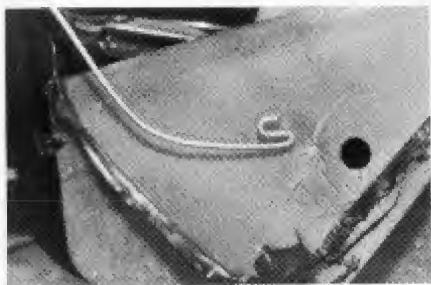
To use, insert the tool into the door the same as you would a Slim Jim, staying within 10" to 12" of the center post end of the door. As soon as the tool has cleared the bottom of the win-



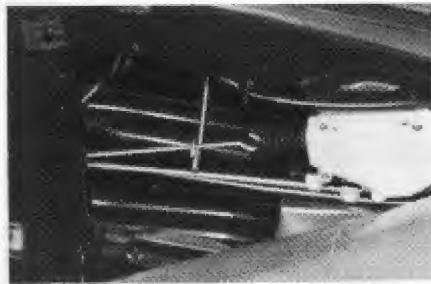
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dow glass rotate the tool so that the tip points toward the inside of the car. Lower the tool until it rests on the rod (*see photograph 5*). Slide the tool toward the front of the car while maintaining contact with the rod and keeping the tool vertical. The tool will come

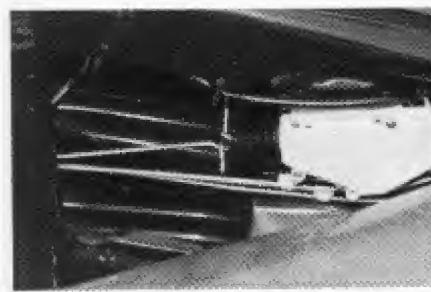


4. Tool made following the design of ABC Lock's Zoro Tool.



5. Opening tool making contact with the rod.

to a stop in the hooked area on the end of the linkage rod, (*see photograph 6*) while keeping slight downward pressure to insure continuous contact with the rod. Move the rod toward the rear of the car from lower down on the rod near the window sill. (*See illustration 7.*)



6. Tool resting on the linkage rod.

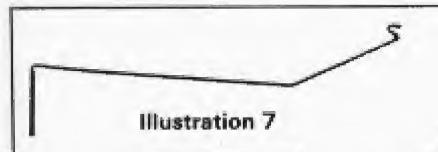


Illustration 7

To remove the ignition lock you must have the lock in the on position; if you have the key, it would be turned to number 1. This allows the retaining pin to be depressed. This pin is located 11mm/.433 from the rear edge of the face plate or approximately 20mm/.787 from the face of the lock, positioned 7.5mm/.295 to the left of zero. Driving the pin into the lock

would not allow the release of the lock because there is a large truarc type clip on the rear that needs to be positioned to clear the housing. This positions itself when you rotate the plug to the number 1 position.

One advantage we have with the Scorpio is that we don't need to pull the steering wheel to remove the lock. Simply remove the bottom half of the shroud that's around the column. All the screws or screw holes are visible except one screw that they hide underneath the release lever for the tilt column, underneath the orange lever beneath the column (*see photograph*

*8).* The retaining button that holds the lock in the housing is easily accessible directly on the top side of the lock (*see photograph 9*). Of course the lock has to be in the on position to depress.



8. Location of hidden screw holes.

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**9. Retaining button, found on the top side of the lock.**



**10. The HPC TIB-KIT key machine adapter.**



**11. Key inserted and locked in place in the TIB-KIT.**

My suggestion for the present is to simply replace the total set of locks. In this case, destroying the existing lock for removal purposes is okay. As I said before, to drill would only be a frustrating experience; I think it would be much easier to use a body grinder and grind the face off the ignition lock. Don't try this though without removing the shroud, because you don't want to scar anything. Now you can easily line the wafers up manually or remove them from the front allowing you to turn the ignition on. Depress the retaining button and remove the lock.

The door and trunk locks can be removed and replaced in very much the same way as any car door or trunk locks. If you wonder now how horrible this sounds, call your local dealer and

check their prices for this job, and your distributor to check on the price of the set of locks. You'll find that if you were able to do just one of these a day you could cost less than the car dealer, but still charge enough to earn more than some of the smaller locksmith shops make during the whole day doing other things.

As soon as everything is set-up for Scorpio keys, (i.e., machines, key blanks, code books, and code equipment) you should be able to decode a door lock with a set of depth keys and manufacture a key.

If you have a 1200CM HPC machine, HPC will very soon be releasing an adapter for their machine, their number for the adapter is TIB-KIT. They also have available an HPC/Silca

machine to cut the Tibbe, called the GT-40. Ilco-Orion also has a machine available called the KD84 to cut the Tibbe key by code.

If you have the TIB-KIT, (see photograph 10) simply use your universal card for jaw "A." The readings would be: Depth = .310 (only one depth for all cuts) and Spacing = (1) .285, (2) .365, (3) .445, (4) .525, (5) .605, (6) .685. Spacing is from bow to tip. These combinations are figured with or from the TIB-KIT and are not applicable without the TIB-KIT. The key blank number is Silca F021P.

Continuing with the clarifications, I don't know if any code books are available. I hear they are going to a direct digit system, meaning the code will be whatever the actual cuts are. That may

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**12. Numbers on the shaft representing the cuts.**



**14. Roller acting as a spacer.**



**16. Slotting wheel doing it's job.**



**13. Adapter kit placed on the key machine.**



**15. The TIB-KIT on the 1200CM machine.**

KIT is not just for duplication; you can cut by code as well if you have translated the code to cuts).

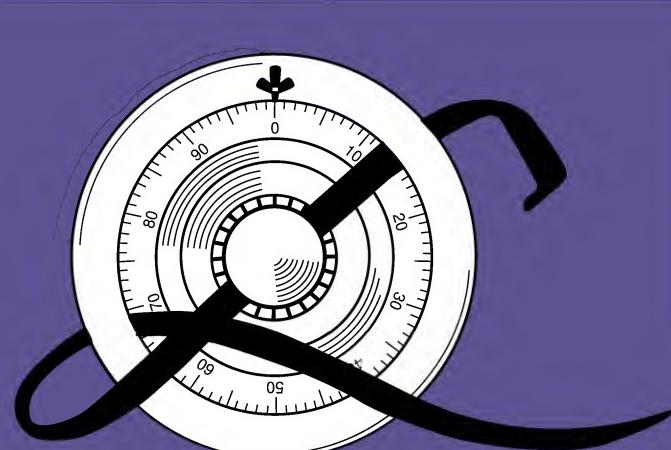
The TIB-KIT we used in compiling this article is a prototype and may change somewhat before production.

To work, the key is inserted through the end and locked in place by a set

screw (see photograph 11). The end of the shaft has two sets of numbers, one on each side of the shaft, ranging four up and four down, representing the cuts. The code is cut into the key on four different positions. (See photograph 12.)

The kit is placed into the jaws resting the stop on the bottom of the unit against the jaws, (see photograph 13). The roller is slid over the end of the jaw shaft acting as a spacer to compensate for the unit in the jaws. (See photograph 14.) When on the 1200CM it will look like photograph 15.

Now you can cut the key by simply rotating the key to the different positions by turning the bow of the key. Then watch the slotter wheel, which comes with the TIB-KIT (see photograph 16) do its job. ■



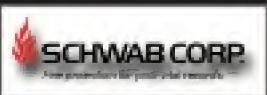
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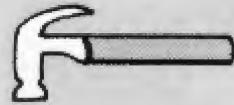


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The National Locksmith

Tools



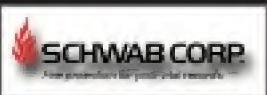
TOOL

If there is one thing that locksmiths really love it is their tools. There is a tool for every purpose under heaven. Some are clever and nice to have. While others are truly indispensable. In this product review section we present you with a variety of the tools manufactured to meet the needs of the locksmith. Feel free to use the Rapid Reply card to request information on any interesting product you may see here.



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### Two Tools From ABC Lock Co.

The Button Biter is made of steel rod with saw teeth on 2 sides of the tip which keep the tool from slipping off the button and the button can be moved forward, backward or up. It can be bent to make contact with most lock buttons. The guide string (made of 80# braided nylon Catfish line) helps guide the tool to the button and helps move the button.

The Door Jack is the tool that spreads the door so a locksmith can insert the Button Biter inside the car to move the lock button.



### Aero Lock's Key Scope

Key Scope is an 8-power monocular designed to allow sharp, close focusing, about one foot. If you are looking through a car door window at a key in the ignition about 4 feet away, key scope will give you the same view as if you were holding the key in your hand.

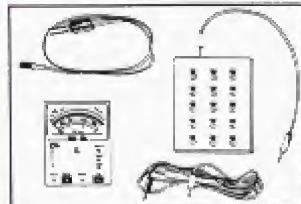
Key Scope comes with a leather case with belt loop, lens covers, and carrying strap. A booklet is also included which gives tips on using Key Scope, and reading many types of car keys.



### ALS Economy VATS Decoder

The Economy VATS Decoder, from American Locksmith Service, includes a resistor unit, meter unit, and interface accessories.

The resistor unit simulates the 15 key pellet values and is used to decode the key blank number required by the VATS computer. The meter unit is designed to provide immediate direct reading of the key blank number for customer key duplication. The interface accessories are for connecting the units to vehicle VATS systems for diagnostics, computer decode, and for key identification.



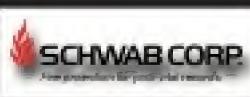
### Gil-Ray Cutters For Imports

Gil-Ray Tools Inc. has recently added the following new cutters to their line of precision key machine cutters.

The Gil-Ray CW 80 MC is a direct replacement cutter wheel for HPC/Silca: One, Two, Three and Nine key machines. It also replaces cutters for Giuliani DC-1, Taylor KD-11, Cisa and other Italian Key machines.

The improved GR-B precision cutter is for the Borkey Rexa, Errebi Pro-toro, and Yankey machines that use the 80 x 5 x 15mm cutters.





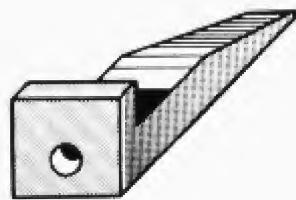
## High Tech Adds Tools To Line

High Tech Tools has recently added hundreds of tools to its line of locksmith items. Stocking hard to find items seems to be the norm at High Tech. Items such as the VATS tester, digital calipers, and more basic items such as picks, key machines, probe lights and their full line of auto lockout tools.

## HPC's Ultimate Auto Wedges™

Although the "Ultimate Auto Wedges" are among the least expensive tools in HPC's product line, they are among the most effective. They are made of  $\frac{3}{8}$ " to  $\frac{3}{4}$ " thick smooth, lightweight plastic, highly resistant to distortion and/or breakage.

Special features include built-in stops to prevent over-insertion, and an "Illumination Hole" to allow focusing a flex light while using two hands to guide the entry tool.



## LDM Enterprise's Ford Pick Set

The Ford pick set allows one to open doors and trunks without prior picking experience. No raking is necessary; simply "rock" each of the picks in the lock until you find the one that fits.

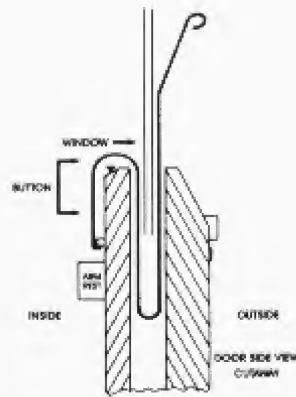
"Rocker" pick sets available include Ford, Chrysler, Datsun, and GM.

A free catalog is available upon request.

## Pro-Lok's MCOT Tools

The Multi Car Opening Tools from Pro-Lok open cars in less than 30 seconds.

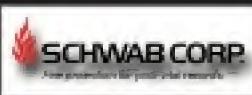
These tools bypass modal lock systems and prevent you from having to find the lock linkage. The tools go down one side of the window and back up the other side. You then just look inside of the car and guide the end of the tool to the lock button.



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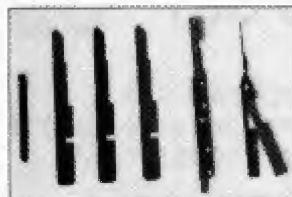
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## R & D's FM Side-Bar Pickset

The FM Side-Bar Pickset from R & D Tool Company includes six tools, a special spring retainer and lifter fork are sold separately, as well as 12V vibrating tool.

The tools can be used on car and trunk lockouts, and to fit a first key with the decoder. Wafer springs are held compressed, allowing wafers to be free to travel vertically in their cells, without the influence of wafer springs.



## High Tech's Lock Out Set

High Tech Tool's Model 1600 Auto Lock Out Set is designed to unlock most any car door. This complete set incorporates two full size manuals and 13 tools.

The tools are designed to unlock vehicle car doors with minimum effort. The bend in the tools allow you to reach the door linkages easily. Color coded handles make it easy to identify the right tool. The manuals are fully illustrated guides to each door. Full page illustrations show the locksmith exactly where to place the tool and how to open a specific door in a few seconds. Brief but concise instructions give you the rest of the information.

## ABC's Line Of Rod Biters

The Dog Tooth tool opens most horizontal or vertical lock linkage cars and trucks including S10 Chevy and S15 GMC.

The Zoro and Vampire tools open the more difficult cars and trucks that the Dog Tooth tool can't open. They have four times as many teeth at the contact point plus the V shape that gives more bite to the teeth.

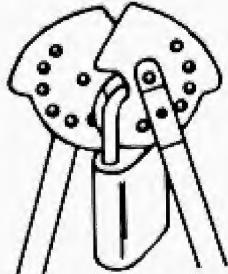
The Zoro tool works only on horizontal lock button linkage such as the S10 and Camero Chevy's. The Vampire operates vertical lock button linkage such as Datsun, Toyota, VW, or GM and now Chevy Astro and Mini Vans.



## HPC Inc.'s Padlock Buster™

The HPC Padlock Buster™ (HPC No. PB-1) has a patented design which permits it to apply upward pressure to the shackle of the lock causing the latch (or latches) to break (or retract) in seconds. In either circumstance the padlock will open. This procedure is a much faster and simpler substitute to cutting or sawing a hardened shackle.

The Padlock Buster™ is adjustable to accommodate a wide variety of shackle heights and thicknesses.



## The ALS Chrysler Ignition Kit

The ALS#56 is a kit designed to remove the ignition cylinder from most Chrysler products without disassembling the steering column.

To remove an ignition cylinder using the ALS#56, first disconnect the battery. Then, pry the chrome winged cap from the ignition cylinder using the straight-slot screwdriver. Position the tool on the ignition cylinder. Following the instruction sheet, drill at the appropriate location, depending upon the type of column you are working on.



## LDM's Complete Car Entry System

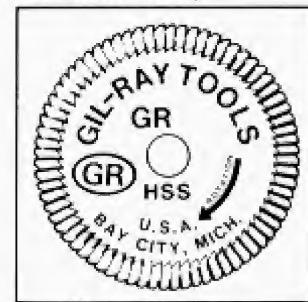
LDM Enterprises offers the complete car entry system from All-Lock. This includes the Car Entry Manual featuring all domestic, foreign and exotic cars. The manual has easy-to-follow, fully illustrated and photographed instructions, and is updated to include all 1988 vehicles.

All the tools that are used in the Car Entry Manual are now available in the Car Entry Tool Kit. This consists of 9 tools.

## Gil-Ray Precision Code Cutters

Gil-Ray Tools, best known for their mail in cutter sharpening service, has recently added precision code machine cutters for HPC/LaGard Code Machines to their line.

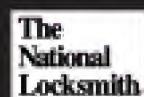
These new Gil-Ray Code Cutters are direct replacements for any machine that uses CW1011, CW1012, or CW14MC cutters. These cutters were designed to give the locksmith a high quality alternative to the other cutters that are available. All cutting edges are precision ground to one thousandth accuracy.



## Pro-Lok's Car Encyclopedia

This encyclopedia features hundreds of photographs of car opening techniques, tools, replacement locks, code locations, code book references and key blank information for both American and foreign automobiles.

The encyclopedia is a three ring hard cover binder with an easy-to-use index. Locksmiths will receive regular update information to make this a complete source of information.



# Opening A Diebold Vault Door

"I have tried to manipulate this type of dial, but after ten minutes, I really had a severe headache from the moving line. Servicing this lock could prove difficult."



by Dale Libby

Some of my most interesting safe and vault jobs come from referrals from other locksmiths and safemen. This allows me to service a large area, up and down the Fox River Valley, as well as metropolitan Chicago. One of the safemen that I like to associate with is Tom Powers Jr., better known as "Little Tommy" who is 6'5" or thereabouts. We have had some interesting and diabolical safe jobs together and have always come out on top, no matter what the odds.

The most recent encounter was with a Diebold vault door at the University of Chicago. This has been one of our favorite accounts, for when all else goes wrong, they will call Tom and I to perform our magic. It is always the same. The University has three locksmiths and combination changers on full time staff. They are always quite busy, especially with their own Medeco key system. When something goes wrong, the University locksmiths will spend a day or two trying to fix the problem. When they cannot handle it, the head of operations will call Tom, and Tom will call me. Of course, the vault opening is now an immediate emergency, only three days after it malfunctioned. If they would have called us at first, then we could have scheduled it on our own time, but now they want us there five minutes after they call. Naturally, they will have to pay emergency prices for immediate services, but they do, so we show up as soon as we can.

The malfunctioning unit in this case was a Diebold (never say die) vault door. The specific complaint was that when the dial was turned to the left, it

would turn hard and the dial would unscrew and come off in your hand, and it was impossible to open the vault door. Loaded for bear, we went out expecting to drill one hole after pulling the dial and looking into the spindle hole to see if we could determine what went wrong. When we finally got to the vault door, we almost laughed in relief, for the opening would prove easy. This was after we had quoted our emergency prices; the school had agreed to pay anything we wanted, just as long as we could get the unit open that day.

What we were up against was a Diebold Hypnotic dial as shown in photograph one. You can see that the opening handle is to the left of the dial, meaning that the lock is mounted left handed. Also it was determined that by the absence of a key changing mark on the dial ring, that this was a "zero" change lock, probably a 900 series. More on this later. The good news was that the dial, in fact was not unscrewing, but rather the outside dial hub that is used in turning the dial. It was unscrewing because the dial turned very hard, so hard that it abated the hub pressure and allowed it to unscrew.

If the lock was working correctly, the hub would never unscrew on its own. The office people that used this safe on a regular basis stated that the dial always turned very hard. All we had to do to open the vault door was to turn the dial by placing a finger on top of the dial ring on the numbers and dial the combination slowly until it opened. This took about a minute to do, and everyone was happy.

The reason that I call this particular dial a Hypnotic dial can also be seen in photograph one. There is a line through the dial that moves when the dial is turned, and reminds one of the picture of a hypnotic disc used in the old Twilight Zone shows at the beginning when they showed the introduction to the series. I have tried to manipulate this type of dial, but after 10



1. Diebold Hypnotic dial and handle (left handed).



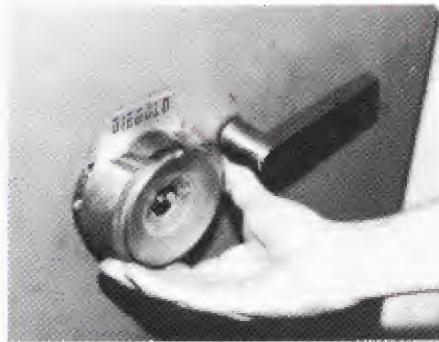
2. Back cover plate removed. Relocker located below lock and handle cam.

minutes, I really had a severe headache from the moving line. The purpose of the line was to help in dialing (at least, the manufacturer thought so). There were numbers on the flat side of the top of the dial ring that corresponded to the number at the opening index. A case of over-complication for the means of simplification. It just did not work.

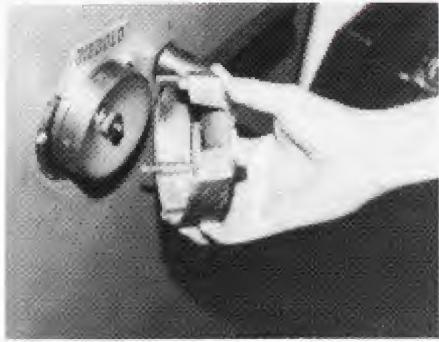
Servicing this lock could prove difficult if you have never worked on one like this before. First, after the door is open, remove the large back cover plate covering the lock and the emergency release bar mechanism. (See photograph 2.) There is a Sargent and Greenleaf lock, probably made for Diebold, the emergency release handle, and the coverplate with relock and thermal relocking device incorporated into one complex diabolical unit. The relocker is a spring loaded plug connected to a wire connected to a thermal relocking figure eight which is attached to the back cover of the combination lock itself; a "double-duty" back cover



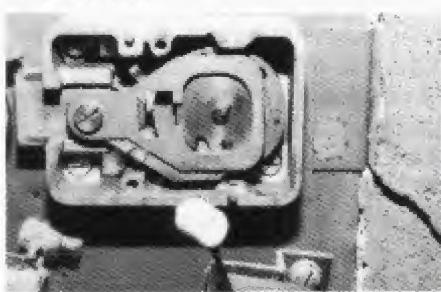
3. Thermal relocker can be seen just below lock.



5. Proper position to remove dial ring (after hub).



6. Removal of dial ring exposing the hypnotic dial.



4. Back plate removed showing zero set combination plate on left-handed lock.

arrangement. The thermal relocking device can be seen in photograph three. Also, it can be seen that much of the interior fire-material (cement) is broken by the customer's repeated slamming of the vault door.

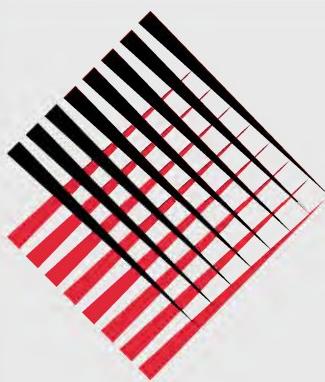
To service the lock, remove the back cover and relock detent from the back

of the lock by removing the two case screws. You will then see the arrangement in photograph four. To properly service this lock, it will be necessary to remove it from the door and tear down the whole unit, clean and adjust the combination lock and replace it again. The reason that I wanted to use this lock, instead of replacing it with a new lock, was that the location of the case screws was aligned with the proper placement of the relock detent, and a lot of improvising would be necessary if we were to put on a new lock.

The first operation would be to remove the lever screw which would remove the locking lever and the "zero change" plate and lever spring from the

lock. The next step is to remove the spline key from the spindle and opening cam with a set of diagonals or a spline key removing vice-grip pliers. Once this is done, the dial and spindle are ready to remove. Here is where it can become tricky if you have never worked on a unit like this before.

First, remove the dial hub on the outside of the dial placing one finger on the top of the dial while unscrewing the dial hub in a counterclockwise direction. After this hub is removed comes the sneaky part. Position your hand as shown in photograph five and grasp the bottom of the dial ring, and pull sharply outwards. The dial ring will come off (*see photograph 6.*) The ring



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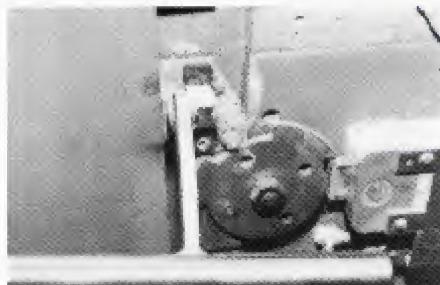
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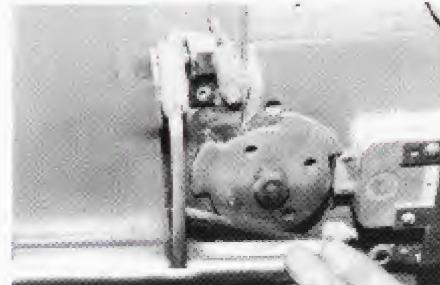
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7. Push Emergency lever in locked position.



8. Emergency lever in unlocked (open) position.

is only force fit onto the front of the door. If the ring will not come off easily, then gently pry around the edge of the dial ring with a small screwdriver to get it loose, and then pull it off. The little plastic name plate with "Diebold" on it will fall off. It is only held in place by a slot in the dial ring. Once the dial ring is removed, the cam and dial can be removed in the usual manner.

A complete tear down of the lock was indicated. All holes were cleaned out with wire brushed as well as the dial hub inner seating plate and recess. The wheels were removed and cleaned and lubricated. Everything was checked, relubricated, and put back on the safe in the proper order, including the relocking device. Everything was lubricated and a new spline key was used.

The unit worked perfectly. It was tricky to put the locking lever in and the plate back on, and this was checked very carefully. Then the combination was changed, using the opening index as the change index.

This is where the back plate in the lock (*see photograph 4*) comes into play. The purpose of this plate can be seen if you were to insert the change key into the lock and turn it without the back cover on. This is not a good practice, so I do not suggest doing it, but when the change key is inserted and turned, it moves this plate and the plate moves the locking lever up and out of the way when the combination is being changed. I have only seen this particular arrangement on true left hand key change combination locks by Sargent

& Greenleaf. Other locks use different mechanisms. I know there were right handed zero change locks, but they use different methods to keep the lever away from the wheels and cam while the combination is being changed. So, it is a good idea to put this plate back, because you will not be able to change the combination in the future in the correct manner without the plate in place.

The last thing to look at, with this particular vault door is the emergency release mechanism, which is activated by pushing the lever down. In photograph seven, the door is locked and the bolts extended. In photograph eight the lever has been pushed down which bypasses the lever locking cam and raises the inner bolt mechanism vertical opening bar. This retracts the bolts without turning the handle cam or disturbing the combination lock bolt in any way.

I know that it may be difficult to see from photograph five, but with careful study, the mechanism can be gleaned. Another reason that I included these pictures, is that if you are ever locked out of one of these vault doors, you could drill a  $\frac{1}{4}$ " hole in the door

*Continued on page 82*

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# The MGB Ignition Caper

"Last Thursday was no different than any other day. The warm voice on the phone asked if I could make a key for an MGB ignition. When she brought it in I started to sweat."



Send your lock and key questions to Jack Roberts, *The National Locksmith*, 698 Bonded Parkway, Streamwood, IL 60107.

by Jack Roberts

I have written many times that perhaps the most interesting part of this profession of locksmithing is the challenges that are presented to us on a daily basis. Just about the time when we feel that we may have seen it all something new comes along and we are back to square one of knowledge.

Last Thursday was no different than any other day. The warm voice on the phone asked if it would be possible to make a key for an MGB ignition.

"Sure," I said, "No problem, where is the car?"

She said, "Oh, the car is in the driveway, but I thought it would be easier if I brought the ignition switch to you." Now, I'm thinking, here is a real twist and an opportunity for today's funtime.

"Why certainly," I said, "just yank that bugger out of there, bring it in, and we'll make a key. Is there someone who can give you a hand removing the ignition?"

"No," she said, "I don't need any help on things I can do myself, but I would appreciate it if you would tell me how to get those two screws out of the thing that holds the lock to the steering post." Now it's not our regular policy to give customers instruction in the finer points of lock servicing, but the determination of this little lady was such that I was compelled to explain that the headless bolts were not a real problem, if you know the trick.

I explained the steps necessary to remove the shear head bolts, and told her how standing on her head in a cramped position was necessary, particularly in an MG. I also explained

some of the other problems that might be encountered, and offered to send a serviceman if she had any difficulties. She thanked me for the information, assured me that she would have no problem, and said that she would bring the ignition to the shop in about an hour.

I hung up the phone with full expectations of hearing from her again, calling for help. In an hour and ten minutes from the time she had called, this smiling young lady walked in, plopped the ignition on the counter, and said, "Well, there it is. How soon can you make a key?"

I don't profess to be the world's greatest authority on foreign car locks but I have worked on a few of them in my day and firmly believe that I can hold my own with just about anything that comes along. A quick look at this lock though, told me that instead of being a piece of cake, this was going to be one tough cookie.

"This will take a while, Ma'am," I told her. "Could you pick it up later today, say, around five o'clock?"

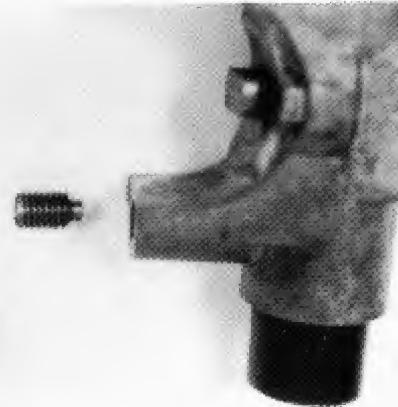
Smiling, she said "Take your time, I still have some more work to do on the car and I can pick it up tomorrow." She left the shop looking cool as an autumn evening and I am the one beginning to sweat in 70 degree air conditioning.

I repeatedly turned this thing over and about trying to locate some indication of a retainer pin. I started checking all of the manuals, went through the ALOA foreign car class materials, made some phone calls to other "experts" in the area, but came up with a total blank on this one.

Then it struck me, that I had picked up a Silca key catalog *"The Car Book"* at the ALOA show. A quick trip to the book shelf and some thumbing through the pages found me looking at a complete listing of all the keys that were used on the MG. What a life saver. The keys were listed by year and model, and the listing also gave the code series and

the correct 1200 CM code card to use for the blank. I'll admit, that I had to study page "V," at the front of the book to get a handle on how to properly interpret all the information that was in the tables, but there it was. The MG auto from '78 to '82, uses the "NE 27" (Taylor X-29) key for the ignition. The key uses code card #68 (XF-51 should be the correct card, by my calculations, but I believe Silca manufactures their own code cards), and the code series is 7001-9000. Silca didn't waste much space on a cross reference, but the key information is there, in five languages, no less.

Finally, I noticed what appeared to be a screwdriver slot, at the bottom of one of the mounting holes. Natural locksmith curiosity had me putting the twist to that one real quick and sure enough out came a short screw. (*See photograph 1.*) Ok, now what? I can't



1. Short screw found in MGB ignition lock.

see just exactly what this screw is supposed to do, but judging by the shape of the tip, and its orientation with reference to the lock cylinder, I figured that it must be the cylinder retainer. I placed the cylinder body in the bench vise, with very light pressure, grabbed the hammer and tapped gently on the switch body. By golly the lock cylinder began to slide right out of the switch housing, (*see photograph 2*) and in a



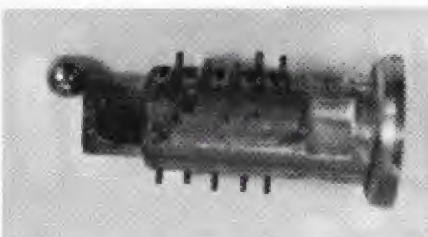
2. Lock cylinder tapped out of switch housing.

couple of seconds I had it in my hand.

I learned a long time ago that things can go flying when one is exploring an unknown area, so I placed the entire unit inside a plastic bag before starting the disassembly. There were no surprises with this one, though. The lock cylinder slid right out of the housing, and the plug was easily removed from the rear of the cylinder. (*See photograph 3.*) There is a ball bearing in a recess in the front of the plug, (*see photograph 4*) but it is not spring loaded and is large enough to find if it were to be accidentally dropped.



3. Plug removed from the rear of the cylinder.



4. Recess in plug containing a ball bearing.

The function of the ball bearing, to the best of my knowledge, is to keep the steering shaft from locking when the key is turned to the off position, but before the key is removed. As the key is removed from the ignition, the ball bearing moves into the keyway, allowing the lock plug to move vertically.

The vertical movement of the lock plug, allows the steering shaft locking bolt to shoot out, locking the steering shaft. This type ignition was used on some of the older German autos, and is what I call a "push down" type ignition lock. I think the ball bearing was also used to increase the pick resistance of the ignition, as the ignition must be pushed in and held in the down position, before it can be picked.

I'll confess, that I didn't have the right CM 1200 card for this particular key, but with the plug out of the lock, and no codes on the case, making the key was a piece of cake. This lock uses a ten wafer opposing tumbler configuration. After dressing the edges of the blade of the key, like you would if you were going to impression the key, the key was inserted into the plug. A few light taps with a small hammer on the wafers, and voila the positions for all the cuts of the key were marked into the blade of the key. A few strokes with the pippin file, and I had an operating key in just a few minutes.

The operating key, had only ten cuts in it. To be "convenience" (the key will work the lock when inserted either side up), all cuts had to be duplicated on

*Continued on page 83*



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**Humor:**

# A Locksmith's Tale

**"All went well until the ad came out and I discovered that Grandma would call for one of her grandchildren so they could get the senior citizen discount."**



by Joseph Locke

**I**t is the goal of every business man or woman to increase business, and so when the salesman from the Silver Pages showed up I went along with his spiel.

"You understand that more people are getting older," he said. "You have to tap into the vast reservoir of senior citizens who need a break and at the same time increase your profits!"

It all made sense at the time, and I was feeling pretty smug about my decision to buy a big ad in the "Book for Seniors."

About this time I ran into an older locksmith who likes to keep me abreast of how dumb I am. I told him about my clever business decision, and he snickered derisively.

"What a sucker!" he laughed. "You bite on anything dangled in front of your nose!"

"What's wrong with increasing business?" I asked. "You're just jealous because you didn't think of it first!"

"Haw, Haw!" he sneered. "I can't wait until that book comes out so I can hear you whine!"

"Whine about what?"

"About the little old ladies that will be driving you nuts!"

"What are you talking about?" I asked.

"I'm talking about when you show up at their house and it takes them an hour to hear the door, and then you have to hear about all their aches and pains and operations."

"I can handle that."

"How about the way they tie their keys up with string a mile long, and you have to take off their old key and put

the new one where the old one was?"

"Doesn't sound too bad," I said nervously.

"What about when they go to pay you and they can't find their checkbook and expect you to wait while they retrace all their actions for the past week, trying to remember when they last saw it?"

"You should be more understanding!" I said. "These people are on a fixed income and some are eating pet food to survive!"

He shook his head and said, "You poor slob. Wouldn't you like to have a fixed income, with your kids gone, your house paid for, with a cost of living adjustment that makes the term "Fixed" a misnomer, and a bank account that has compounded daily since 1974?"

I had enough of his abuse for one day and left him chuckling at my expense.

My grandmother always treated me very well, and so I have always had respect for elderly people. A few of the older crowd tend to be less refined than the others, with a habit of saving everything until they become a stationary "bag lady," but after looking in my garage I find it in my heart to forgive them.

All went well until the ad came out, and I discovered that a grandson or daughter would have grandma call to get work done at a discount for the grandchild. Worse yet, my phone became an "old age hotline," and we found ourselves locking out imaginary theives and gremlins, until my conscience forbade me to install a level IV Medeco on a bathroom door.

We suffered through and became used to hearing about all the troubles that come with growing old.

None of this prepared me for one cold winter evening as I tried to thaw my toes after impressioning a late model Renault.

"The police in the next town have an old lady locked out of her house!" my

wife yelled over Hogan's Heroes.

"Tell them how much and how long it will take me!" I yelled back as I reluctantly put my wet clothes back on.

I had to pick up the lady at the police station, and as I left I noticed that the officer who called removed a cross from around his neck and put some wolfsbane away in a box.

She was very nice at first and we arrived at her house the best of friends. The snow had been piling up all day and I had to walk through drifts to get to her door while she enjoyed the heater in my truck. I quoted a fair price for a quick pick, but when I got to the door...you guessed it...A Medeco cylinder in a Lori deadbolt! My truck was fifty yards away, and it was freezing and close to midnight, and I was stuck.

"Is there any way in other than the front door?"

"No."

"Can I drive you someplace until tomorrow?"

"No."

"Did anybody have a key besides you?"

"No."

Was I in a spot? Yes. I explained how good a lock a Medeco was, and that something had to be destroyed. That was when I learned that she didn't have any more money than I quoted.

I noticed a small window in the front door, and decided that the cheapest way in and out was to break the glass, reach in and unlock the deadbolt, and have her repair the window later. She agreed with my decision, and I hiked back through the snow with my small sledge hammer. I gave the window a tap, and nothing happened. I tried a hard swing, and the hammer bounced off that little window as if I had hit granite. Grandma had neglected to tell me about the bullet-proof glass that a previous locksmith had sold her while keeping a straight face.

*Continued on page 83*



## Illinois Double Sided Locks

"This article will give you some of the information to make handling these locks a little easier. With a little practice and the right tools, they can be a money maker."

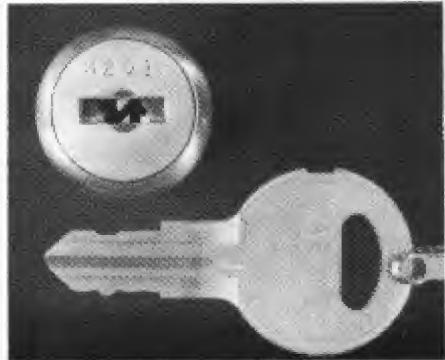
by Robert Sieveking

If you have ever been called to make a key for one of the Illinois double-sided locks, you'll probably recall some of the difficulties encountered making the key to code, or even duplicating one. Until just recently, I dreaded having to make a key for these locks. Being called to make keys for Stow & Davis desks, Globe Wernick or Art Steel vertical file cabinets used to be at least an hour job. With the new emphasis on physical fitness, the racquet clubs, tennis clubs and health clubs have become pretty good customers. A good number of the lockers

used in these clubs are equipped with Illinois double-sided locks. Where there are locks, there is a need for regular service.

Because of some of the special tricks required to simply duplicate a key, the hardware stores and key cutters out there are simply not able to give satisfactory service to these customers. Enter the well trained and professional locksmith. With a little knowledge, you can break into this lucrative market, to not only duplicate these keys, but make keys to code and recombine locks with relative ease. Hopefully this article will give you some of the knowledge to make handling the Illinois locks a

little easier. With a little practice and the right tools, Illinois locks can become real money makers.



1. Typical Illinois lock.

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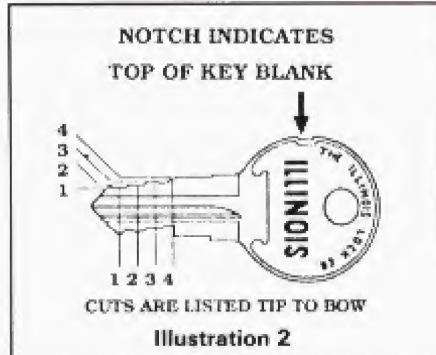
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**Keys to code.** Photograph one shows a typical Illinois lock that I was called to make a key for. This lock was removed from a Conserve-A-File vertical file cabinet. As is common with most Illinois locks, the code was stamped on the face of the lock. In this case, the code was H201. Illinois Lock publishes a code book that is available from your Illinois distributor (IL. PN. #C-154). The code H201 was crossed over to the actual cuts 2122.

The next important step in making this key is to know how to apply these codes to the key. Illustration two shows the Illinois key with the cut spacing and depth information. As you will find, the key is double-sided, but not convenience. This means that the key will only enter the keyway one way. If the key is turned upside-down, it will not enter the keyway or operate the lock. For this reason, the manufacturer has cut a notch in one side of the head of the blank. This identifies the top side of the blank. To read the cuts of an Illinois key, lay it on the bench with the notch toward the top and the blade of the key toward your left, as shown. The cuts of the key are read from left to right, which is from tip to bow. The



depths of the key are numbered from the deepest to the shallowest, 1 to 4. There are only four depths used in double-sided Illinois locks.

Refer back to photograph one and read the cuts on this key. The first cut at the tip is a number 2 depth. The second cut is deeper than a 2, and is read as a number 1 depth. The last two cuts are number 2 depths. Notice that the width of the key is nearly constant over the length of the cut portion. This is because the wafers of this lock are positively positioned by the action of the key. A standard wafer type lock, relies on the action of the wafer springs to bring the wafer into contact with the key.

The Illinois key positions each wafer without the springs. The springs in the Illinois lock are used to spread the wafer pairs only. This is called positive locking, because the wafers are pushed in and out of the plug by the action of the key, and not the action of the springs. It is this feature that makes this lock particularly well suited for outdoor use. I'm sure everyone has had a wafer lock that malfunctioned because the wafers became stuck in the out position. The wafer springs fail, and the lock will not unlock because the wafers do not come down on the key.

The best method that I have found to make these keys to code, is by the use of depth keys. Order a set of factory depth keys and save yourself a lot of problems. I've tried to make these depth keys to dimension, and will tell you, there's nothing like the real thing. Illinois depth key set X14 contains depth keys for all the standard keyways. There are nine sets of depth keys in this kit.

**Proper clamping for the most accurate key.** The next biggest problem in duplicating or making a key to code, is clamping the keys in the key machine. These keys were designed to be hard to

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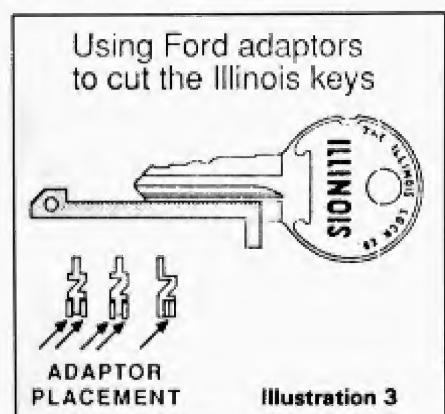
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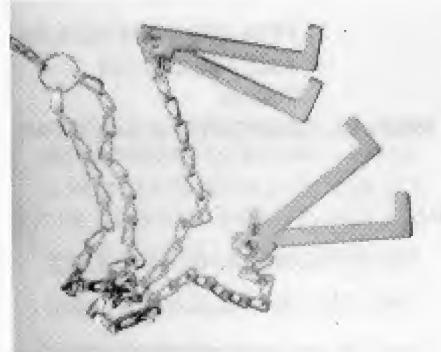


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clamp; this limits their duplication. Some key machines make clamping fairly easy, if they have precision milled vise jaws, while others make holding these keys a nightmare. The solution to this problem that I have been using for many years, on most double sided keys, is an adaptor that was originally designed to be used with the Ford double-sided keys. Illustration three shows how to place the adaptors for use with the Illinois blanks.



The adaptor is placed under the center ridge of the blank and rests in the bottom of the key vise. This also eliminates any error when cutting the second side of the key. After the first side of the key has been milled away, most times there is no place to gauge the depth of the key except the center ridge. This adaptor arrangement works equally well with the Chicago double-sided keys. Photograph four shows a neat trick for keeping the adaptors handy to the key machine without getting lost. Attach your adaptors to the bench next to the key machine using a couple of Mitey-Mite key chains. The chains should be long enough to allow you to use the adaptors without removing them from the bench.

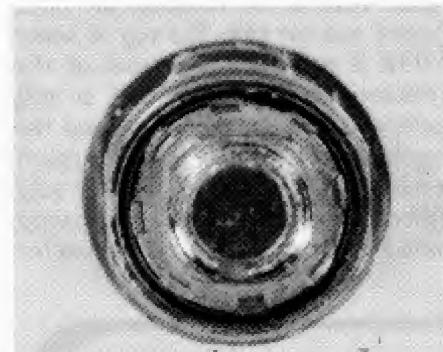


When duplicating Illinois keys, always gauge the key from the tip. The shoulders you may see on some of these keys are not intended to be gauged from. Always gauge from the tip of the

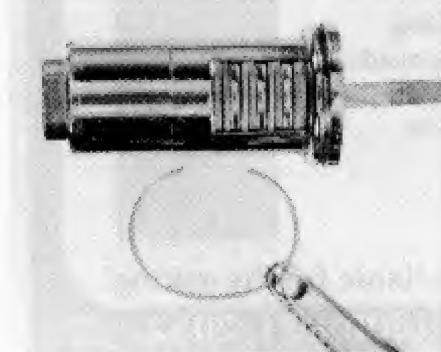
key.

The first tumbler in the lock acts as the key stop. The square cut at the base of the key becomes the shoulder. It is made by the key cutter at the end of the last cut (near the bow of the key). This prevents the key from entering the plug farther.

**Disassembling the plug from the shell.** If the lock must be recombined, or the code is not listed, it may be necessary to disassemble the cylinder. Illinois locks are manufactured using either of two methods to retain the plug in the shell. The first is relatively easy to disassemble, because the plug is held in the shell by staking around the rear of the plug. Photograph five shows the staking around the rear of the plug. If you see the staking, this indicates that the lock does not use the oval retaining ring under the face of the lock.



Make a fixture from a hardwood block, by drilling an 11/16" hole through the block. Place the cylinder, face down, over the hole in the block and drive the plug out of the shell with a sharp blow from a hammer. Place a wood block over the threaded portion of the plug to prevent damage from the hammer striking the soft metal plug. The plug will be ejected from the shell and into the wood fixture without damage. If the plug is retained in the shell using the oval spring retainer as shown in photograph six, the disassembly process is the same, but the lock



will probably be damaged in the process.

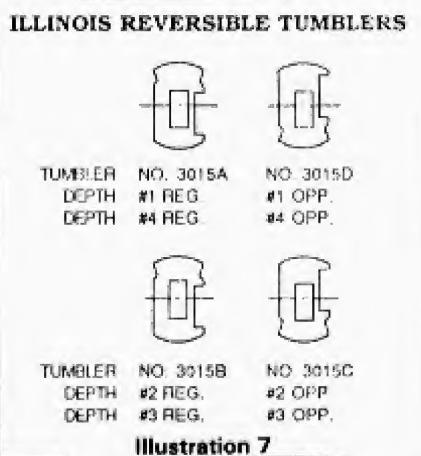
These locks were not intended to be serviced. The spring ring rides in the groove just under the face of the plug. It is possible to slide a number of shims around the face of the lock to compress the retainer and allow the plug to be removed easily. Sometimes by shimming the retainer and driving the plug out using the fixture described, there is very little damage to the plug or shell. Most times the retainer will raise a burr on the shell as the plug exits the shell. You may want to bore a 3/4" hole in the same hardwood block used to extract the plug from the shell. Drop the shell into the hole and it will be held without damage so you can tap the rim of the shell back into shape.

If the lock requires the ring retainer, as is the case with some of the desk drawer locks, replace it with a new one. If the lock is a cam type lock, where the plug is being held in the shell by other means, leave the retainer out. If you read locks, I strongly recommend that the locks having the spring retainer be read rather than disassembled. A percentage of these locks will be destroyed or badly damaged during disassembly.

Once the plug is out of the shell, simply use the depth keys to read the combination. Insert the keys into the plug, one at a time, making note of the proper cuts. Make the key using the depth keys.

**Combinating the cylinder.** If it is necessary to change the combination, or recombine the lock away from its original combination, we need to look more closely at the arrangement of the tumblers. For an example, I will show the "A" group wafers, used with the 100 series keys (i.e., 100, 110 and 115 keyways.) The function of the "C" group wafers is identical, but includes master keying capabilities.

Illustration seven shows the wafers





used to combine the Illinois locks in the "A" group. If you look carefully at the captions under each wafer, you will see that there are two possible depths for wafers 3015A and 3015B. Wafers 3015C and 3015D are opposite wafers, and are used behind the regular wafers to make the wafer pair. The position of the keyway is the same, but the wafer is flipped end for end to allow for the correct spring attachment. If the desired combination for the lock were 1-2-3-4, the wafer arrangement would be as follows:

#### First Position

The tumblers for the first position would be 3015A and 3015D assembled into the plug in the same position as shown in illustration eight. The wafers here are shown in the position they

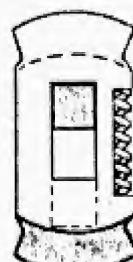


Illustration 8

would appear in the lock, as viewed from the front or face of the cylinder. The spring is always on the grooved side of the key, away from the ridge side. The "regular" wafer is always closest to the front of the lock (head of the key), and the "opposite" wafer is always to the rear of the lock (tip of the key). The front wafer is a 3015A and the shaded rear wafer is a 3015D.

#### Second Position

The second position would be a 3015B and a 3015C, paired for a number 2 depth and assembled in the same orientation as shown in illustration seven. The 3015B (reg.) wafer is toward the front of the lock.

#### Third Position

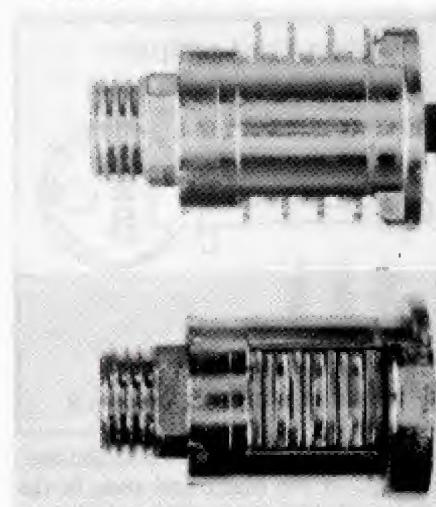
The third position would be a 3015B and a 3015C, paired for a number 3 depth and assembled in the reverse orientation as shown in illustration eight. That is, the tumblers are both flipped end for end. The top of wafer 3015B is toward the bottom of the cylinder. The spring pocket is still toward the right, as shown, and the regular wafer (number 3015B flipped) is toward the front of the lock. The only difference between a wafer pair paired for a #2 cut and a wafer pair paired for

a #3 cut is that the wafers are flipped end for end.

#### Fourth Position

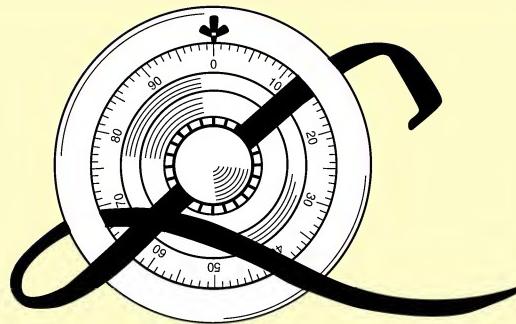
The last position would be a 3015A and a 3015D, paired for a number 4 depth and assembled in the reverse orientation as shown in figure #3. Both wafers are flipped end for end, the spring stays on the right and the regular wafer (3015B) is toward the front of the lock.

Photograph nine shows the combi-



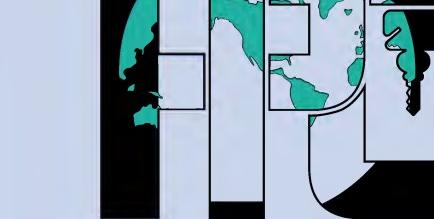
9. Combined lock plug.

*Continued on page 84*



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# Servicing The Sargent 8-Line

"The 8-Line is Sargent's answer to the need for a heavy duty lockset. It is highly resistant to damage, vandalism and high traffic usage."



by Don O'Shall

For the locksmith in a primarily residential community, the sight of a Sargent 8-Line lock may be a rare sight indeed.

The 8-Line is Sargent's answer to the need for a heavy duty lockset. It is highly resistant to damage, vandalism, and high traffic usage, as well as offering many burglary-resistant features. All of this makes it a very popular commercial/industrial lockset.

I believe I will always remember the day, many years ago, when I first serviced a Sargent 8-Line lockset. It was for a church school in the area near my shop, and the job was for a simple rekeying, with all the locks on only one key.

At that time, research books were virtually non-existent, so it took nearly an hour and a half to remove and rekey the lockset, which today takes me an average of 8 to 12 minutes.

But worse yet, when I inserted the key and tried it, nothing happened. The key turned around and around with no effect.

So I disassembled and reassembled it again. In fact, before I finally realized the solution to the problem, I had taken it apart and put it together three times!

And what was this difficult to find solution? Nothing. There was nothing whatsoever wrong with the lockset. On their entrance function lockset, the key does nothing until the button on the inside of the lockset is engaged. Then the key has something to do, and it will unlock the door. But it cannot unlock an unlocked door, which reduces wear on the inner knob parts.

Talk about egg-on-face! I had, by that time, nearly three hours tied up in a few dollars worth of rekeying. In fact, the whole job was barely worth the three hour labor I already had in it.

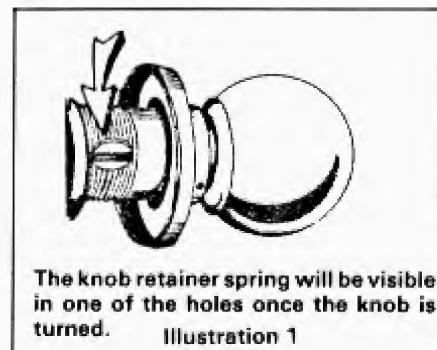
And even if I had not already quoted a price, how could I have justified charging for that extra time that my own lack of knowledge had cost?

This was a common dilemma for locksmiths of that period. Maybe that is at least a part of the reason for my obsession with the accumulation of accurate information and technical books.

Other than knowledge, the only tools required to service these locksets are a screwdriver set, a spanner wrench, and an  $\frac{1}{8}$ " pin punch.

Although the collar on these can theoretically be loosened by any spanner wrench, the placement of the spanner hole and the shape of the collar make Sargent's own spanner wrench highly desirable. Other manufacturer's spanner wrenches will tend to distort the shape of the spanner hole, reducing its effectiveness.

Loosening the inside collar is the first step in disassembling this lockset. Once it has been loosened, the inner portion of the knob throat will be visible. On this, depending on the year of manufacture of the lockset, will be one, two or four round holes about half the diameter of a dime. Turn the inside knob until a thin wire becomes visible in one of the holes. (*See illustration one.*)



Depressing this wire will allow the removal of the inside knob itself. But don't use sharp words or a sharp instrument to depress it. The wire is relatively thin, and even something as simple as a screwdriver tip can be sharp enough to destroy it, causing a real disassembly nightmare. Instead, use a flat tool with a thin rounded edge. The ideal tool, of course, is the other end of the Sargent spanner wrench. But if you don't have this, an excellent alternative is the Kwikset cylinder removal tool. Its rounded edge is almost identical to the Sargent spanner wrench edge.

Once the inside knob has been removed, the inside collar can be further loosened. But there is no reason to completely remove it. It only needs to be loosened to allow better access to the outer knob collar and knob throat, which are removed in the same manner.

You might wonder why we removed the inside knob if the outer knob removes the same way. An interlock feature requires this, and any attempt to remove the outer knob first will usually cause real headaches.

Once the outer knob assembly has been removed, we can disassemble it. The first step in doing so is to remove the small nylon or plastic ring surrounding the knob throat. You will need to push down the half-moon knob retainer to fully remove this, as you will to lift off the dress collar at the base of the knob.

Once the dress collar and ring are out of the way, the retaining pin (a screw on some early models) will be visible. It may be a roll pin or a solid one. Either way, it needs to be driven into the knob. (This is only a distance of about a quarter of an inch.)

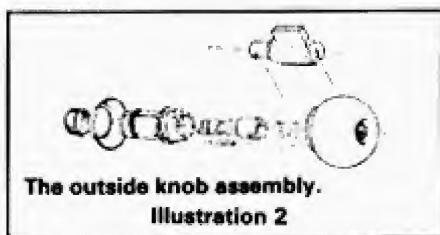
With the retaining pin driven in (using the pin punch mentioned earlier), the knob throat can be unscrewed from the knob housing. When it is nearly off, hold the knob and throat so that the keyway of the cylinder is visible at the top. Only then unscrew the

throat the rest of the way.

By doing so, the cylinder, driver assembly and "cylinder spring" will be removed in the proper order, and will be visible as you disassemble it (so that you can observe its proper positioning to remember when re-assembling it).

Also, there is less chance of the cylinder "turning" in the knob, and shifting to a position which will be difficult and time-consuming to correct.

Illustration two shows the outer knob assembly parts, and their relative positions. The parts shown are from a Sargent 8G05, which is the entrance function lockset.



Other common functions are the 8G04, which is the storeroom function (outside always locked, inside free for exit, and the key pulls the latch back); 8G37 which is the classroom function (outside locks or unlocks by key, inside always free for exit); the 8G44 service station function (key pulls latch back when door is locked by inside button, but if button is pushed with door open it will be released when latch hits strike); 8G54, the dormitory function (identical to the service station function, except that the key can also lock the outer knob); and the 8G50 motel function (with visual occupancy indi-

cator and capability for shut-out key use in inner push button).

Each of these, of course have many other uses than their simple titles would indicate. The G in their numbering system, by the way, refers to the "guarded latchbolt," which is Sargent's way of designating a deadlatch.

From the simple basis of the 8G05 Entrance lockset, each of the other common functions can be created, although, as with any conversion, on or off the playing field, skill and preparation are required.

For the Sargent this means locating a source for the parts needed for conversion, purchasing the parts and stocking them for the time when they will be needed, and knowing which parts are needed.

Illustration three shows the 8G05 entrance lockset with the parts normally involved in conversion marked by an arrow. These are (reading from right to left) the spindle/driver assembly, the cam spring, the deadlatch assembly, and inside hollow driver, and the inside knob.

The parts marked with a star are parts involved in conversion to certain functions. The chart in illustration four shows the relationship of parts between the different functions.

You will note that the motel function (8G50) is not included on the chart. This is because the number and expense of the conversion parts for these, as well as the restricted usability, well exceed any advantages that conversion parts normally offer.

To sum up the chart, going from an

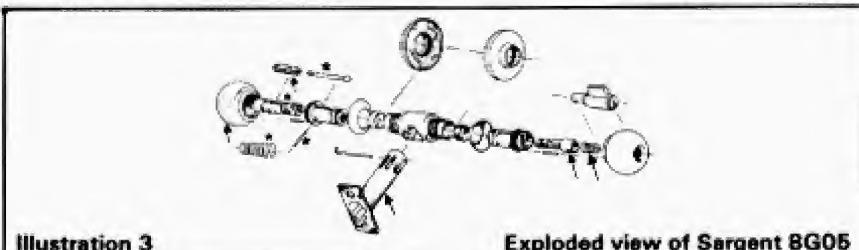


Illustration 3

FUNCTION	SPINDLE & CAM SPRING	INSIDE DRIVER	TURNBUTTON
8G04		08-0139	NONE
8G05			08-4326
8G44	08-2777 08-0407		08-4328
8G54	08-2782	08-0137	08-4327
8G37	08-0214 08-2831	08-0138	NONE

Illustration 4: Common conversion parts.

8G05 to an 8G04 requires the removal of all parts indicated by a star, and exchanging the 08-0139 Hollow Driver in place of the 08-0137, and the use of a plain inside knob instead of a knob with a hole in it for a push button.

Converting from an 8G05 to an 8G44 requires changing the deadlatch from a standard deadlatch (08-2510) to a restoring deadlatch (08-3364), and the 08-4328 turn button/tail in place of the 08-4326.

Converting to the dormitory function (8G54) from the entrance function (8G05) is a little more complicated. We need to change the driver assembly from an 08-2777 to an 06-2782 (spiral cam assembly), and substitute a spiral cam spring to match it (06-0214 in place of 08-3364), replace the turnable push button (08-4326) with a blank button (08-4327), exchange the 06-0362 spiral pin for the existing 06-0168 spiral pin, and add an 06-0218 washer.

To go from the 8G05 to an 8G37 requires the replacement of the standard driver assembly (08-2777) with a spiral cam assembly (08-2831), replacing its matching spring (a 08-0214 in place of the existing 08-0407), exchanging the inside knob for a blank knob with no push button hole (08-4320), and removing those parts indicated by a star in illustration three.

As you can see, a small investment in parts is needed, with the conversions from an entrance function to store-room function or classroom function the easiest and least expensive for you. The conversion to a service station function is the next easiest and next least expensive, with the dormitory function bringing up the rear. As mentioned earlier the hotel function (8G50) is not even in the running. Buy them complete to fill any orders you may have, but converting to it is impractical.

Bear in mind that all of the conversions we are talking about are through the use of minimal time and factory made parts. Although we can all take pride in the ability to do strange field conversions without the proper parts, carefully hand forming the necessary parts from what is available, it is an excellent way to lose your shirt, your business and the hound dog at your feet if it becomes the primary way you do business.

Today's highly competitive society demands professional methods and techniques that free you up to handle more customer's needs. The profits are there for those of us who do. The rest will make a living. ■

# Shop Talk

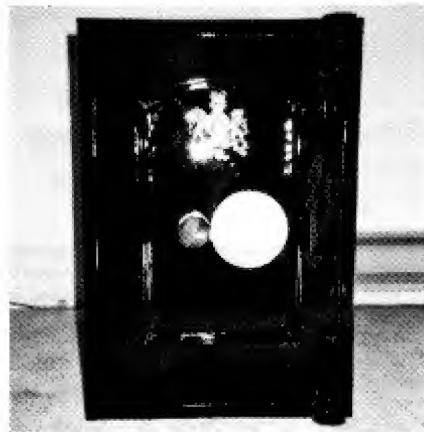
## Helpful Questions and Answers

**Written by all of the following authors:** Shirl Schamp, Jack Roberts, Dave McOmie, Steve Spiwak, Dale Libby, Robert Sieveking, and Don O'Shall.

Send your locksmith questions, along with a self-addressed stamped envelope to: Shop Talk, *The National Locksmith*, 698 Bonded Pkwy., Streamwood, IL 60107.

*Here is some information about a safe I would like to share with the readers. Also enclosed are some photographs. Don Spenard, Jr. of Seattle pointed out this beauty of a safe. Around the key hole cover it reads "Thomas Skidmore - fire and thief resisting safe maker." Found at an*

*antique shop, it was made in England and is two feet tall and one and a half feet wide and deep. The safe handle looks like a door knob and the bolt work is locked by a lever lock. Inside*



**Beautiful antique English safe.**



**Detail of brass ornamentation**

*there are two drawers that use a post key. One key opens both drawers and another key opens only one. There is quite a bit of detail in the brass ornamentation. Is the lion and the horse with french letters a family crest or the safe makers emblem? I have been told the safe was made around the turn of the century. Does anyone have a closer approximation?*

*Gene Lawson  
Washington*



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*Q: I am just beginning to do safe work and have a customer who would like to have his Mosler safe in photograph one opened. The combination is unknown.*



1. Old Mosler safe with unknown combination.

*The safe has been exposed to the weather for a period of time and has also suffered a hammer attack (the dial, dial ring and spindle have been bent; the bolt control handle is loose). I have been able to get the dial to turn freely and pick up the wheels (I believe there are three), but have been unable to get the bolt control to move (I was trying to cause the dial to bind by putting pressure on the handle). Can I do that on this model of safe.*

*The only information I have on the safe is the dial, stamped "The Mosler Safe Co., the safe color is black, the bolt handle has the number 250197 stamped on it, and the measurements are width 27½", height (excluding casters) 31½" and depth 26".*

*What is the best way to open the safe? If you recommend drilling please give the drill point and angle of drilling. Also, is there hardplate? I am also unsure about the bolts—if they are stuck how can I free them up. Would there be a relocking device on the safe?*

Don Stevens  
North Carolina

\*\*\*\*\*

*A: We all have to begin somewhere when doing safework. There are many things that you need in your arsenal if you plan to continue to do safe opening*

*and repairing. One of the most important things to have is a good set of safe books in your library. I would recommend Volume I and II of *The National Locksmith Guide to Safe Opening* by Dave McOmie. All of your questions are answered in the book. But, let me start at the beginning of your letter and answer your questions in order with a little paranthetical advice.*

*Before you go and open the safe, are you sure it is worth it? It is an old cast iron Mosler, with a Yale OB (OBB) type mechanism. If it has been exposed to the outside elements as you stated, then the door, and possibly the inner mechanism is rusted shut. The safe has suffered a hammer attack and parts are broken and immovable. Be assured that replacement parts, dial, spindle, inner locking mechanism, and the handle and spindle will not be available anymore. The safe is probably 50 or more years old, and in deplorable shape to begin with. Unless you are an accomplished machinist, you will have to tell the customer that if you get the safe open, you will probably not be able to repair it.*

*With an OB type mechanism, the bolt lever or locking dog lever is gravity controlled, and when the combination is dialed to the correct position, the lever moves up out of the way of the bolt control handle, and allows the safe to open. Putting pressure on this handle will not cause you to get better readings when dialing, and in fact, may hamper the dialing and opening of the safe. On this model, it is not recommended to put pressure on the opening handle.*

*The only way to get this safe open is to drill. Common practice would be to drill in at 12 o'clock, take your readings, and transfer to the opening point, which is probably around #50. There may or may not be hardplate, but if there is, be prepared to penetrate it with hardplate drills and a drilling rig.*

*As for relockers, yes, there is an external relocking device above the wheel pack to prevent punching if it has not been removed by a safe technician in the past. If the bolts are rusted in place (a good bet on this unit) then hitting the door and flooding anything you can with penetrating oil would be the best bet.*

*A quick method of trying to open this unit would be from the back of the safe. Drill a couple ½ inch holes, use a safe light and a long screwdriver to remove the back curb of the lock; usually two screws at 12 and 6 o'clock. This*

*method works if there are no drawers, ledgers or other blocking materials in the way to see the back of the safe door. Good luck, for you will surely need it.*

07

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*Q: As a locksmithing student, Mr. Ferreros' August 1988 Technitip regarding constructing a trap cylinder to retrieve an unauthorized key, has me confused.*

*How does the lock tell the difference between an authorized and an unauthorized key?*

*A: A trap cylinder is not able to differentiate between an authorized and an unauthorized key. The cylinder simply traps any key that is used to rotate the plug. If the lock were to be picked, the cylinder would lock up and not rotate farther than the trap. If a key of any description is used, it will turn the plug to the trap and be stopped. The key cannot be removed because the top pins, acting on the key, are prevented from rising up out of the plug by the cylinder. Personnel normally authorized to operate the lock are usually warned that a trap has been installed and cautioned not to use the particular lock. There are cases that would warrant setting the trap without the knowledge of selected key holders, to determine the identity of someone opening the lock during unauthorized times, but this is less common.*

06

\*\*\*\*\*

*Q: Help! Can you identify the lock in illustration two. The illustration is actual size but there is no name, number, or any identifying marks on the lock. The door in figure A opens to the left, just far enough to get the key in. The keyway looks like the No. 9. The bolt (#1) in figure B just lays in a groove and slides to the right to open. The shackle has a slot for the bolt; (#3) is the spring.*

*It has continuous pressure on to bolt at all times. I made a key for the lock but my customer would like to know the make of the lock. In the January issue of *The National Locksmith* there is a picture of the lock but with a different keyway.*

*Any help you can give me on this will be greatly appreciated.*

Pete Petersen  
Colorado

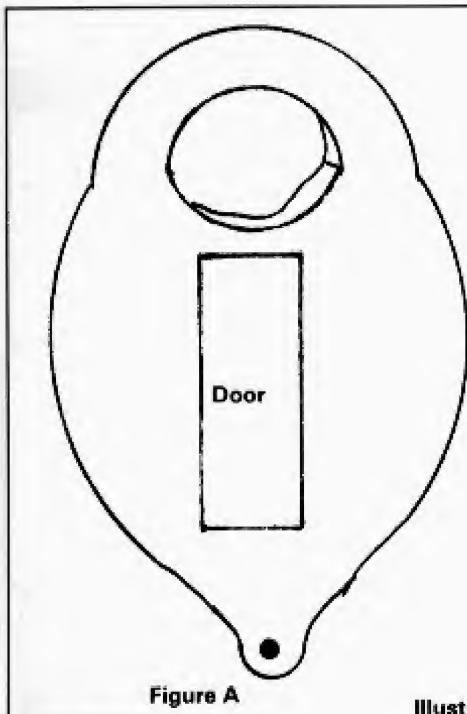


Figure A

Illustration 2

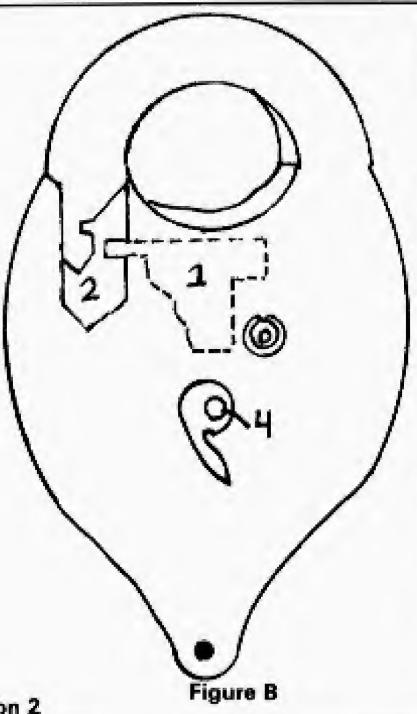


Figure B

A: Pete, you did an excellent job of providing details for our research, but you really didn't go quite far enough for us to determine exactly who made this piece or when it was made. The materials are important—steel, brass, cast iron—as well as the location of body rivets or other means of assembly. Is the lower tip of the case, where a chain could be attached, on both sides or just one side? Are there wards in the case?

I would have to assume that you disassembled the lock in order to get the interior details of the locking bolt and the spring. You say that the keyway resembles the number "9" yet your drawing shows a reverse "9". There must have been millions of locks of this type manufactured around the turn of the century by almost that many different manufacturers.

Yes, your piece is similar to the Telephone Co. cable box lock pictured in a previous *Shop Talk* answer but it is certainly not the same. Given what you gave us, I am forced to do some educated guessing and call this one an M.W. Co. lock manufactured prior to 1900. The M.W. (Mallory-Wheeler) Co. was the largest manufacturer of padlocks of that period and evolved from the Pierpoint, Hotchkiss Co. (1834-1842); which became the Pierpoint, Mallory & Co. (1843-1851); this then changed to the Davenport & Mallory Co. (1852-1857).

The period 1858 to 1860 saw another name change, Davenport, Mallory & Lockwood. From 1861 to 1864 it was the Davenport Mallory & Co., and

from 1865 until 1910 it was known as Mallory, Wheeler & Co. Somewhere in this time frame one of the companies listed probably manufactured the lock that your customer now owns. We will be delighted to pin it down to a closer answer but we will need the additional information I have mentioned. Many thanks for giving us the opportunity to research this piece and special thanks to Frank Arnall for providing the history of the M.W. Co.

**Attention Shop Talkers:** Please take special note of the information in this answer. All details of a piece are very important in arriving at a reasonably accurate answer of a time period and manufacturer. The exact location of rivets, the type of material used, post or no post, details of both sides of the case. There is so much similarity and so much infringement of design of the early lock manufacturers that it is really difficult to tell the designer from the designer. 03

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*Q: One of our customers brought this "key" in to find out what it was for. We have not seen anything like it in the four years we've been doing lock work. Can you fill us in?*

Jerry Shirley  
Florida

A: The "key" that your customer brought you, is truly a piece of history. You might have recognized the end profile of the "Automatic Keyhole Lock" as being very similar in outline

to a bit key, which was the state of the art security lock for many years. The keyhole lock is a key blocker that is inserted into the keyhole of the old mortise locks that used the bit type keys. Illustration three shows the keyhole lock as it would be inserted into the keyhole. Illustration four shows the key turned 180° to retract the barb, allowing the lock to be removed from the keyhole.

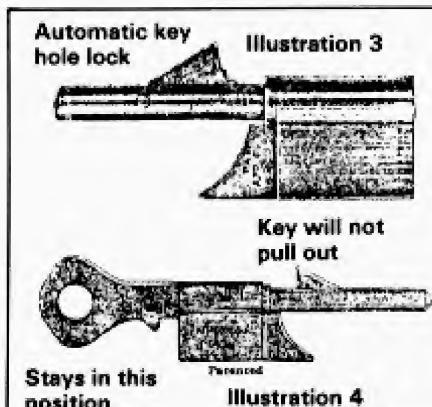


Illustration 4

During a period in our not so distant past, the bit key lock was considered high enough security to protect most of your household valuables. As the pin tumbler technology was emerging, an inventor decided that a small pin tumbler cylinder could be adapted to increase the security of the bit key lock. The barbed cylinder was inserted into the keyhole, to prevent the lock from being manipulated by a "skeleton" key or pick tool. This was a very successful idea, and was duplicated by a number of inventors and manufacturers.

The Independent lock that you show, uses a spring loaded barb, which allowed the user to insert the blocker into the lock without the key. Other models required the cylinder to be turned, retracting the barb, to insert the lock into the keyhole. This type of lock might have been used by an inn keeper or hotel manager, to remind a delinquent guest of the necessity in keeping his (or her) room charges current. A hotel guest in a strange town might use it to insure the security of his room. Ilco discontinued the manufacture of the keyhole lock in 1968.

Though its use has faded with the advent of newer and better locking systems, the concept is still sound. Today's high security cylinders are manufactured to fit into most standard lock bodies. The need for higher security still exists, but new ideas must still be made compatible with existing technology.

06

## Shop Talk

*Continued from page 79*

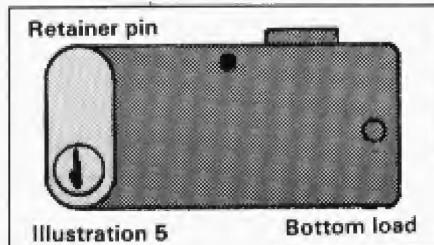


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*Q: I am writing to you, asking two questions. First I would like to know the code number on a Master padlock. The number is 3116. I don't have a number in my code book only from 3200 on.*

*Also, I want to know how to pull the plug out of a file cabinet. The unit has four drawers and the brand is HON, but the cylinder is a Chicago Lock with #2X07 stamped on the front. (See illustration 5.) The one I'm talking about*



*has a Chicago name but no code number. I want to know how to pull the plug out for changing combinations or whatever the reason is for the plunger going down when the key turns the cylinder.*

*I would appreciate it if you would kindly answer these two questions.*

Alfonso Ortez  
California

*A: Al, the Master padlock codes, 3001 to 3200 have really been slow in getting accumulated. Sorry, we can't locate the 3116, but we did come close with 3115. I would like for you to impression this lock and send the code to *Shop Talk* for future publication. If you have trouble impressioning, send us the lock and we will do it for you so we can get the number on record.*

*For you and other *Shop Talkers* we are printing all of the series that we have available:*

3005	5126	3108	0377
3031	4042	3113	0145
3032	1131	3115	6411
3035	3012	3123	0231
3036	6646	3128	0153
3037	4014	3131	2511
3041	0133	3132	6023
3049	0131	3134	0123
3051	0265	3146	0223
or	1275	3147	6640
3054	0435	3149	3015
or	0535	3151	0454
or	0424	3165	5544
3058	6630	3167	6401



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3060	6630	or	5401
3068	7257	3169	2014
3076	0255	3171	0136
3078	0124	3174	6116
3084	5316	3177	2216
3088	1511	or	2217
3091	3013	3183	0325
3093	0152	3185	6153
3094	6112	3189	0155
3098	6152	3190	2416
3102	6356	3192	6653
3106	1130	3196	6114
3107	6156	or	2014
or	6157	3199	6133
		3200	1316

Come on, guys and gals, send in some numbers and lets get this series finished!

Now, Al, about your file cabinet lock. The only reason I can think of for removing the plug from a lock of this type would be for keying alike to another cabinet. Given that situation it would be more economically feasible to order a lock with the code that you desire.

File cabinet locks come in many shapes and designs, but all of the pin tumbler locks have the plug held in place with a pin retainer. Some manufacturers use a brass or light steel spring cover located on top of the lock for top loading. Remove this cover and you will find that there are four pin holes and one retainer hole. Dump everything out, change the combination, and reassemble.

Others have a sleeve that slides on from the front of the lock. Slide the sleeve off and you will find that it serves as the spring cover. And then, you will find some that are bottom load, these are real bears to do and I wouldn't recommend attempting it unless you have plenty of time on your hands.

Bottom loads will have a retainer pin visible on top of the lock or on the right side (usually). To remove this pin you must drill alongside and then work the pin out with a probe or sharp pointed tool. You can also use an end mill of the correct size and mill around the pin until enough material is removed to allow grasping the end with a plier.

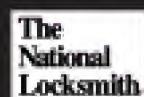
For replacement or exchange of a file cabinet lock it isn't necessary to use original equipment, (i.e., Chicago for Chicago) since other manufacturers produce similar locks. Just be sure to match up the length, bolt design and locking rod hole.

I hope that this is enough information to allow you to proceed with whatever it is that you are doing. 03

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## Letters

*Continued from page 6*

they don't take an "it's not my job attitude."

In final remarks, in many states it is legal for police officers (peace officers) to possess and use locksmith tools such as car opening tools and picks though any department permitting such possession should require some training in their use.

Jack Crandall  
Texas

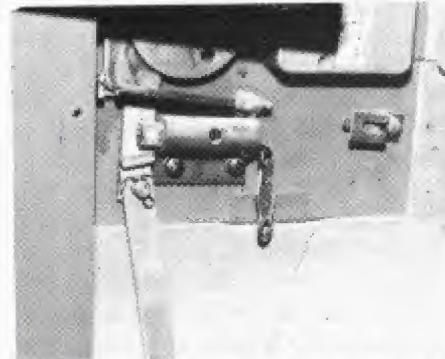
P.S. While this was printing, I remembered one instance some years ago before I was a trained locksmith when I opened a car with a Slim Jim. A baby had been left unattended in a car in a large parking lot with the windows up. The temperature outside was over 100 degrees and the temperature inside the vehicle was probably over 180 degrees. The baby was conscious but lethargic. I was able to get the baby out without endangering the baby with flying glass from breaking the window because I could use a Slim Jim. The baby was rescued, alive and well, and the mother was arrested for Reckless Endangerment of the Child. Think about it!

## Diebold Vault Door

*Continued from page 48*

through to the back of the door, and by inserting a 3/16" rod with a recurved end (like some of Norm Schamp's tools) you could open this vault door in about three minutes, and only have a small hole to fill when you're done. I will not give the specific measurements, but it is towards the opening side of the door about 4"-6" from the opening lever handle. Vertical measurements are up to you.

The relocker works also on the vertical opening rod. (See photograph 9.) When it is set off, it blocks movement of this rod, even when the combination is done. It also blocks the movement of



9. Diebold vertical rod relocker with thermal relock link-activated.

*Continued on next page*



## Installation Tools

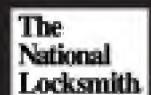
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## Diebold Vault Door

*Continued from previous page*

the rods when the emergency lever is pulled up or pushed down, so if the relocker has been set, it will be necessary to drill for the relocker itself, and this short-cut method of opening will not work. ■

## MGB Ignition

*Continued from page 52*

both sides of a second blank in the duplicator. After the second key, containing all twenty cuts (ten on either side) was completed, the original hand filed key was completed by duplicating the second key back onto the first. You could hand file sides of the key, but using the duplicator was faster in this case.

Reassembly is the direct opposite of the disassembly procedure. Insert the ball bearing into the recess in the plug and slide the plug into the cylinder. Check the operation of the key and slide the cylinder into the switch housing. There is a spring loaded cam inside the switch housing that engages with the rear of the plug but the line up can be easily seen. Insert the retainer screw into the mounting screw hole, tighten it securely and the job is finished.

You may never see an MGB ignition lock like this one, but if you do, just follow these easy steps and you will have the piece of cake I thought that I was going to have.

Anyway, we had only been open for a few minutes Friday morning when the young lady who had brought in the ignition, came floating in and asked if her lock was ready. "Sure is, Ma'am," I said, "And I made you two keys."

"That's super," she said, "now I can see if my new ignition harness is all wired up properly. Worked on it last night and finished packing the wheel bearings this morning. I sure am anxious to see how that little devil runs."

I asked how long she had owned the car and she said she had bought it at a police auction a couple of months ago, had it towed to her home and had been working on it ever since in her spare time. I had to admire the young lady and gave her my best wishes for successful completion of the job. ■

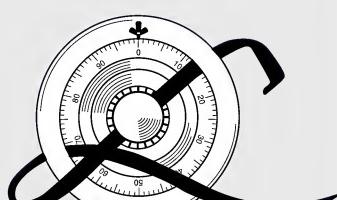
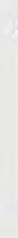
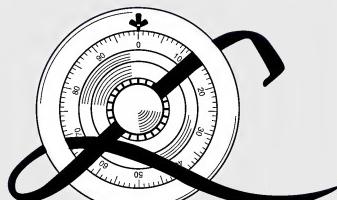
## Humor

*Continued from page 54*

Now I was mad. I knocked that little window, frame and all into her living room not caring about how it would affect my chances of becoming a CML.

*Continued on next page*

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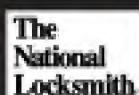
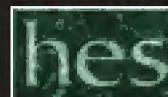


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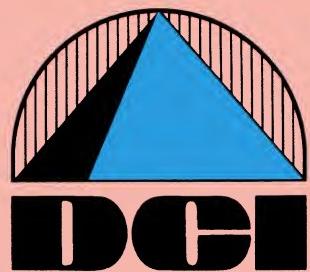
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## Humor

*Continued from previous page*

Lucky for me, it fit right back in the door with a few screws, and I wanted out of there when I was done.

"That'll be 90 dollars," I said.

"Not so fast!" grandma said. "You have to go with me through the house to make sure no one is hiding inside!"

Argument was useless, so I went through closets and looked under beds for ten minutes.

"That'll be 90 dollars," I said.

"What about my key?" she asked.

"What key?"

"The key to the front door. I lost it in the snow and I need another one!"

"That will cost more," I said.

"I'm not paying you anything unless I get a key."

Another twenty minutes and I had a key for her front door.

"That'll be 90 dollars, I said.

"Not until you check the house for burglars again!"

One more time through the closets and under the beds and I started getting a little annoyed.

"That'll be 90 dollars," I said.

"No, it won't," she snapped.

"Now what?!" I screamed.

"I get a senior citizen discount!" ■

## Illinois Lock

*Continued from page 60*

nated lock plug. Use caution in handling the plug with the key out, because the tumblers can slide out either side of the plug. Putting it back together so that it works again is like trying to work a crossword puzzle in a foreign language if you're not familiar with the Illinois lock.

I'm sure that most of the clubs you will contact realize that it is impossible to have the best security and at the same time receive satisfactory reliable service from any locking system without immediate local service. Qualify yourself to service the Illinois locks, then get out there and sell your service. Most of the club managers are not aware of the fact that their locks can be serviced locally. Health clubs, country clubs, pools, corporate fitness centers and the like are using lockers that all need keys and lock service on a regular and repetitive basis. Check it out. Good luck.

The only large distributor for Illinois locks that I am presently aware of is; Northeast Lock Corp., 48 Oak Street, Clifton, NJ 07014. Their phone number is 1-800-524-2575 or (201) 777-7509. ■



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